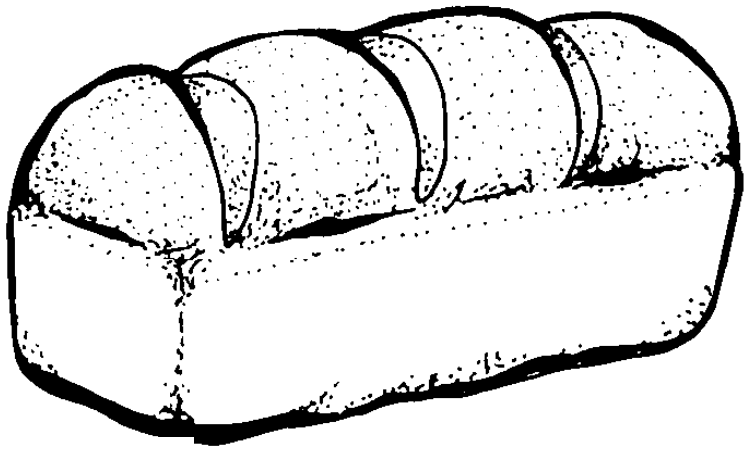
KANSAS WHEAT QUALITY
2000



Kansas Wheat Commission **Kansas Department of Agriculture**

WEIGHTS, MEASURES AND CONVERSION FACTORS

Weights and Measures and Conversion Factors

Bushel Weights:

- Wheat & Soybeans = 60 lbs.
- Corn, Sorghum & Rye = 56 lbs.
- Barley (grain) = 48 lbs.; Malt - 34 lbs.
- Oats = 32 lbs.

Bushels to Metric Tons:

- Wheat, Soybeans = bu. X .02721555*
- Barley = bu. X .021772
- Corn, Sorghum, Rye = bu. X .025400
- Oats = bu. X .014515

1 Metric Ton Equals:

- 2204.622 Pounds (lbs.)
- 22.046 Hundredweight (cwt)
- 10 Quintals

1,000 Kilograms Equals:

- 36.7437 bu. Wheat or Soybeans
- 39.3683 bu. Corn, Sorghum or Rye
- 45.9296 bu. Barley
- 68.8944 bu. Oats

Area:

- 1 Acre = .404694 Hectares
- 1 Hectare = 2.4710 Acres

Yields:

- Wheat: bu. per acre X 0.6725 = quintals per hectare
- Rye, Corn: bu. per acre X 0.6277 = quintals per hectare
- Barley: bu. per acre X 0.5380 = quintals per hectare
- Oats: bu. per acre X 0.3587 = quintals per hectare

* Kansas wheat production as of August 1, 2000 is forecast at 362.7 million bushels (9,871,000 metric tons).

WHEAT QUALITY 2000

KANSAS AGRICULTURAL STATISTICS SERVICE
Fact Finders For Agriculture
Kansas Department of Agriculture
632 SW Van Buren, Rm. 200
PO Box 3534
Topeka, KS 66601-3534
Phone: 785-233-2230

A Cooperative Function of

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KANSAS WHEAT COMMISSION

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Issued September 2000

FOREWORD

The Kansas Wheat Commission joins the Kansas Department of Agriculture in presenting this 2000 Wheat Quality Report. This information is of vital interest to wheat producers, as well as domestic and foreign buyers.

The basic quality information is compiled by summarizing data from inspection certificates for railroad car samples of Kansas wheat moving from first point of sale. In addition, truckloads converted to carlot equivalents were included. Determinations of protein percentage, test weight per bushel, and other grade factors were made by the ***Kansas Grain Inspection Service, Inc.***

The Kansas Wheat Quality profile section is a summary of milling quality information by variety for the current year's Kansas wheat crop. Enumerators from Kansas Agricultural Statistics Service made the field collection of samples used in this project. We are indebted to the Department of Grain Science and Industry, Kansas State University, for milling and evaluating laboratory results from the samples tested on a very tight time schedule.

We also want to give a special word of thanks to the wheat farmers throughout Kansas who cooperated in the objective yield survey and allowed wheat samples to be collected.

Eldon J. Thiessen
State Statistician

Ed Banning, Chairman
Kansas Wheat Commission

Copies of this bulletin are available upon request to the Administrator, Kansas Wheat Commission, 2630 Claflin Road, Manhattan, Kansas 66502 or the State Statistician, 632 SW Van Buren, Room 200, P.O. Box 3534, Topeka, Kansas 66601-3534.

This bulletin is also available on the internet at the Kansas Agricultural Statistics Service homepage at http://www.nass.usda.gov/ks/

KANSAS WHEAT QUALITY 2000

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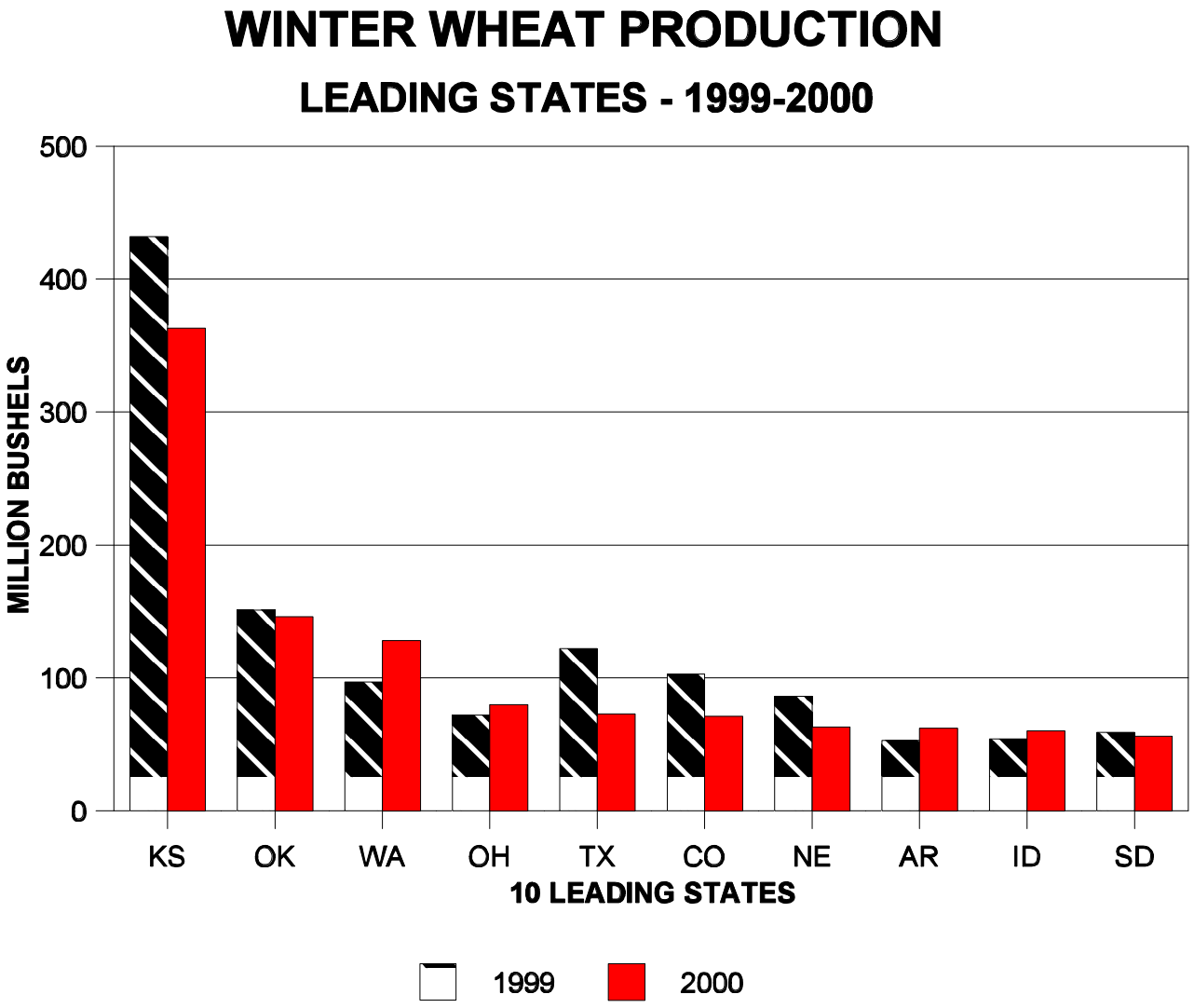
WHEAT SITUATION

World wheat production as of August 1, 2000 is expected to total 581.3 million metric tons (21.4 billion bushels), down 1 percent from a year ago. Total U.S. wheat production, at 61.6 million metric tons, will be down 2 percent from a year ago and will account for about 11 percent of the world total. Winter wheat production in U.S. is estimated at 43.4 million metric tons, or about 70 percent of the total U.S. wheat production. Kansas, with an estimated 9.9 million metric tons of winter wheat, will account for 23 percent of the U.S. winter wheat production. This output represents 16 percent of the total U.S. wheat output and 2 percent of the world total.



ACRES OF WHEAT PLANTED BY SIZE GROUP

Farmers with 500 or more acres of wheat planted accounted for 22.6 percent of all wheat farms and represent 64.1 percent of acres planted in the fall of 1999. The total acres planted totaled 9,800,000 acres.

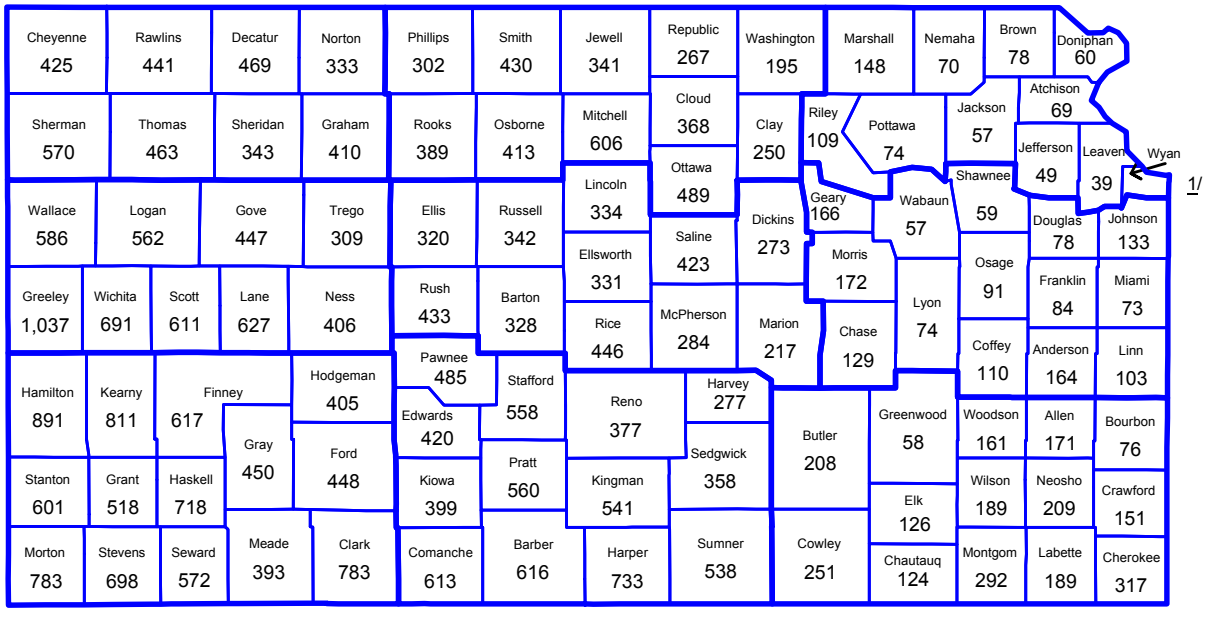
WHEAT PLANTED IN KANSAS FOR 2000 HARVEST, BY SIZE GROUPS

Acres of Wheat Planted per Farm	Number of Farms	Percent of Farms	Acres of Wheat Planted
1-24	3,000	8.9	37,700
25-74	6,500	19.0	258,200
75-199	8,100	23.7	857,800
200-499	8,800	25.8	2,362,600
500-749	3,400	10.1	1,746,800
750-999	1,600	4.9	1,195,100
1.000-1,999	2,200	6.5	2,446,300
2,000-2,999	300	0.8	556,900
3,000 +	100	0.3	338,600
State	34,000	100.0	9,800,000

AVERAGE ACRES PLANTED, BY COUNTY

Greeley County led the State with an average of 1,037 acres planted per farm, followed by Hamilton County with 891 acres and Kearney County with 811 acres. Statewide, the average is 288 acres of wheat planted per farm.

ACRES OF WHEAT PER FARM PLANTING WHEAT, 2000 HARVEST



1/ Not published due to insufficient data.

U.S. WHEAT SUPPLY AND DISAPPEARANCE, 1992-2000

U.S. wheat supplies for the 2000/01 season are expected to be 3,313 million bushels, down 1 percent from last year. Beginning stocks, at 950 million bushels, are virtually unchanged from a year ago. Estimated U.S. wheat production as of August 1, at 2,263 million bushels, is down 2 percent from last year. Disappearance is expected to total 2,351 million bushels, compared with 2,393 million bushels for 1999. Domestic use is expected to account for 1,251 million bushels, down 4 percent from the 1999/2000 crop. Exports, forecast at 1,100 million bushels, are 1 percent above a year ago. Carry-over at the end of the crop year is expected to total 962 million bushels, 1 percent above the 1999/2000 level.

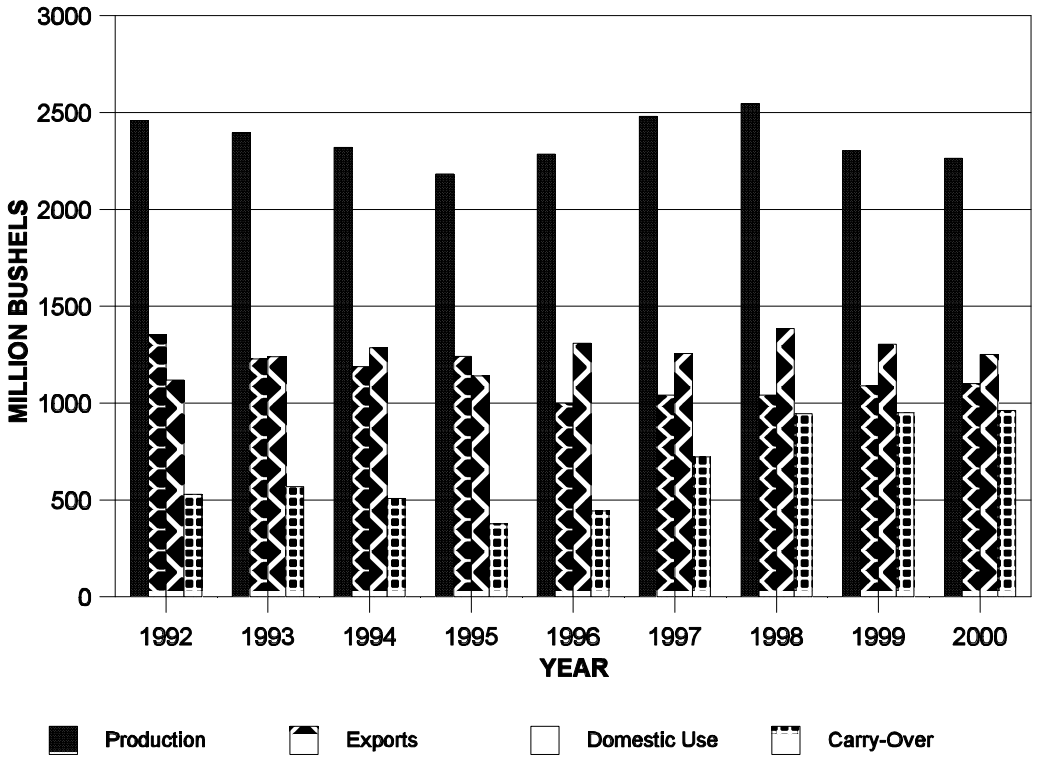
U.S. WHEAT SUPPLY AND DISAPPEARANCE, 1992-2000

Year Beginning June 1	Supply			Disappearance			Ending Stocks May 31
	Beginning Stocks	Production	Total 1/	Domestic Use	Exports	Total 2/	
1992/93	472	2,459	3,001	1,118	1,354	2,472	529
1993/94	529	2,396	3,036	1,240	1,228	2,467	568
1994/95	568	2,321	2,981	1,287	1,188	2,475	507
1995/96	507	2,183	2,757	1,140	1,241	2,381	376
1996/97	376	2,285	2,753	1,308	1,001	2,310	444
1997/98	444	2,481	3,020	1,257	1,040	2,298	722
1998/99	722	2,547	3,373	1,385	1,042	2,427	946
1999/2000	946	2,302	3,343	1,303	1,090	2,393	950
2000/01 3/	950	2,263	3,313	1,251	1,100	2,351	962

1/ Includes imports. 2/ Totals may not add due to rounding. 3/ Preliminary.

U.S. WHEAT SUPPLY & DISAPPEARANCE

1992-2000



KANSAS WHEAT STOCKS

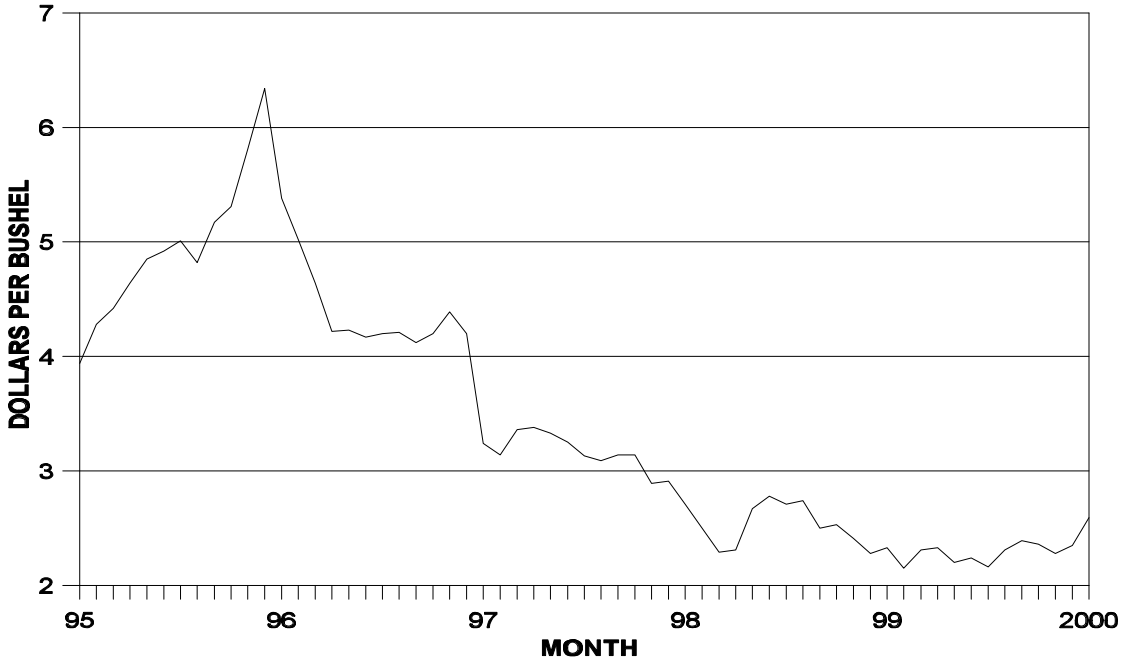
Marketing Year	September 1	December 1	March 1	June 1
1994/95	305,233	216,388	115,096	51,968
1995/96	236,431	167,201	92,753	40,048
1996/97	179,327	109,012	96,564	33,833
1997/98	351,810	244,197	213,301	106,901
1998/99	379,253	271,381	226,800	148,561
1999/2000	394,409	284,868	230,645	168,899

MONTHLY MARKETINGS OF KANSAS WHEAT, 1994-99

Month	1994-95	1995-96	1996-97	1997-98	1998/99	5-Year Average
	- - - - - - - - - - - - - - - - - - - Percent - - - - - - - - - - - - - - - - - - -					
June	21	5	10	7	13	11
July	23	33	33	34	23	29
August	13	15	7	10	10	11
September	9	13	6	4	9	8
October	5	8	4	4	8	6
November	3	3	5	4	4	4
December	8	9	8	7	7	8
January	6	6	8	8	6	7
February	3	3	6	5	3	4
March	4	3	7	6	8	6
April	2	1	4	6	4	3
May	3	1	2	5	5	3

KANSAS WHEAT PRICES

JUNE 1995-JUNE 2000



HIGHLIGHTS OF THE 2000 CROP

The 2000 Kansas wheat crop, as of August 1,2000, was estimated at 362.7 million bushels, down 16 percent from last year. Wheat was planted on 9.8 million acres for the 2000 crop, down 2 percent from 1999. The acres harvested for grain totaled 9.3 million acres, up 100,000 acres from a year ago. The 2000 yield was estimated at 39 bushels per acre, down 8 bushels from 1999.

Seeding for the 2000 wheat crop started in early September. It progressed rather slowly until scattered showers were received in late September and early October. By the end of October, 97 percent of the acreage was seeded, slightly ahead of the 92 and 95 percent seeded in 1999 and for the 5 year average, respectively. Seeding was complete by the middle of November. The percent of the crop emerged was ahead of last year's and the five year average until the week of November 14, when, at 92 percent emerged, the crop fell behind the 94 and 95 percent emergence for last year and the five-year average respectively. Dry weather was one of the main reasons for the delay in crop emergence as well as the decline in wheat condition. Condition was rated at 45 percent of the crop in good to excellent condition. By the end of November, 94 percent of the crop had emerged which was behind last year's and the five year average of 98 percent.

Very little precipitation fell during December and most of January leaving some areas without any measurable precipitation since September. The wheat conditions continued to decline as a result of the dry weather. The wheat crop lacked snow cover until the end of January when a winter storm blanketed the fields with 2 to 4 inches of snow. During February, most of the State received precipitation in the form of rain or snow.

The winter wheat crop broke dormancy in most areas by the end of February. The condition of the crop improved slightly from January. The crop suffered only light freeze and wind damage during the winter. The freeze damage was reported as 1 percent moderate, 9 percent light, and 90 percent with no damage.

In early March, greenbugs and army cutworms were reported at treatable levels in the southwest. However, insect and disease infestations were mostly light throughout the spring. By April 2, 44 percent of the 2000 crop was jointed, which was ahead of the 30 percent jointed at the same time last year and the 24 percent for the five-year average. The wheat conditions continued to improve during March and April. By May 1, 14 percent of the wheat was headed, ahead of last year and the five-year average of 9 and 4 percent, respectively. The hot and dry weather, with temperatures reaching the 90's and 100's the last week of May, was the main reason for the condition to start declining. The majority of the crop, 87 percent, was turning color by June 4, compared to 52 percent last year and 40 percent for the average.

Harvest of the 2000 crop began in the south-central part of the State the first week of June. Harvest progressed very rapidly and was nearing completion the first week of July with 94 percent of the crop harvested, compared to 33 percent last year and 44 percent for the average. The 2000 wheat harvest was complete by mid-July.

DOMESTIC UNITS

Year	Planted Acres	Harvested Acres	Yield per Acre	Production	Test Weight	Protein 1/	Moisture
	- - - - 1,000 - - - -		Bushels	1,000 Bu.	Lb./Bu.	- - - Percent - - -	
1991	11,800	11,000	33.0	363,000	59.9	12.9	11.2
1992	12,000	10,700	34.0	363,800	59.4	12.4	12.6
1993	12,100	11,100	35.0	388,500	59.8	11.4	12.4
1994	11,900	11,400	38.0	433,200	60.3	12.1	11.4
1995	11,700	11,000	26.0	286,000	58.4	12.3	11.1
1996	11,800	8,800	29.0	255,200	60.2	13.3	12.3
1997	11,400	10,900	46.0	501,400	60.6	11.8	11.9
1998	10,700	10,100	49.0	494,900	61.5	11.5	11.2
1999	10,000	9,200	47.0	432,400	60.2	11.5	12.2
2000	9,800	9,300	39.0	362,700	59.9	11.9	11.8

1/ All protein data shown have been converted to a 12% moisture base.

METRIC UNITS

Year	Planted Hectares	Harvested Hectares	Yield per Hectare	Production	Test Weight 1/
	- - - - - 1,000 - - - - -		Metric Tons	1,000 MT	Kg/Hl
1991	4,775	4,452	2.2	9,879	77.2
1992	4,856	4,330	2.3	9,901	76.5
1993	4,897	4,492	2.4	10,573	77.0
1994	4,816	4,614	2.6	11,790	77.7
1995	4,735	4,452	1.7	7,784	75.2
1996	4,775	3,561	2.0	6,945	77.6
1997	4,614	4,411	3.1	13,646	78.1
1998	4,330	4,087	3.3	13,469	79.2
1999	4,047	3,723	3.2	11,768	77.6
2000	3,966	3,764	2.6	9,871	77.2

1/ Kilograms/Hectoliter = 1.28841 X (lbs./bu.).

WHEAT QUALITY DATA - KANSAS GRAIN INSPECTION CERTIFICATES

IMPORTANCE OF WHEAT QUALITY

The quality of wheat as characterized by protein content, strength of gluten, weight per bushel, amount of dockage, grades and grade defects, milling data, and physical dough analysis has an important impact on the use of wheat for flour and, hence, its price in the market place.

This report on wheat quality, issued by Kansas Agricultural Statistics Service, helps farmers appraise the quality of the wheat crop being marketed and aids buyers in locating wheat with the desired characteristics.

Information on wheat protein content, weight per bushel, varieties, and grade defects helps producers of high quality grain obtain better prices. The grain trade, in turn, is in a better position to know the areas in which the quality and gluten strength of wheat meet their requirements and direct their purchases accordingly. Thus, the reports facilitate pricing and marketing of the crop. Publication of wheat quality data by counties and agricultural statistics districts as soon as the new crop comes on the market provides everyone with current information coinciding with the harvest period, thus maximizing benefits to producers, grain buyers, and the wheat industry in general.

The following table shows the grading standards used by the Kansas Grain Inspection Service, Inc. in grading samples of hard red winter wheat. This bulletin is based on a summary of samples graded by the Kansas Grain Inspection Service, Inc.

GRADES AND GRADE REQUIREMENTS FOR HARD RED WINTER WHEAT

Grade	Minimum Weight per Bushel	Maximum Limits:						
		Defects					Wheat of Other Classes	
		Heat Damaged Kernels	Damaged Kernels (Total)	Foreign Material	Shrunken and Broken Kernels	Total Defects	Con-trasting Classes	Wheat of Other Classes (Total)
	Pounds	- - - - - - - - - - - - - - - - - Percent - - - - - - - - - - - - - - - - -						
1	60.0	0.2	2.0	0.4	3.0	3.0	1.0	3.0
2	58.0	0.2	4.0	0.7	5.0	5.0	2.0	5.0
3	56.0	0.5	7.0	1.3	8.0	8.0	3.0	10.0
4	54.0	1.0	10.0	3.0	12.0	12.0	10.0	10.0
5	51.0	3.0	15.0	5.0	20.0	20.0	10.0	10.0

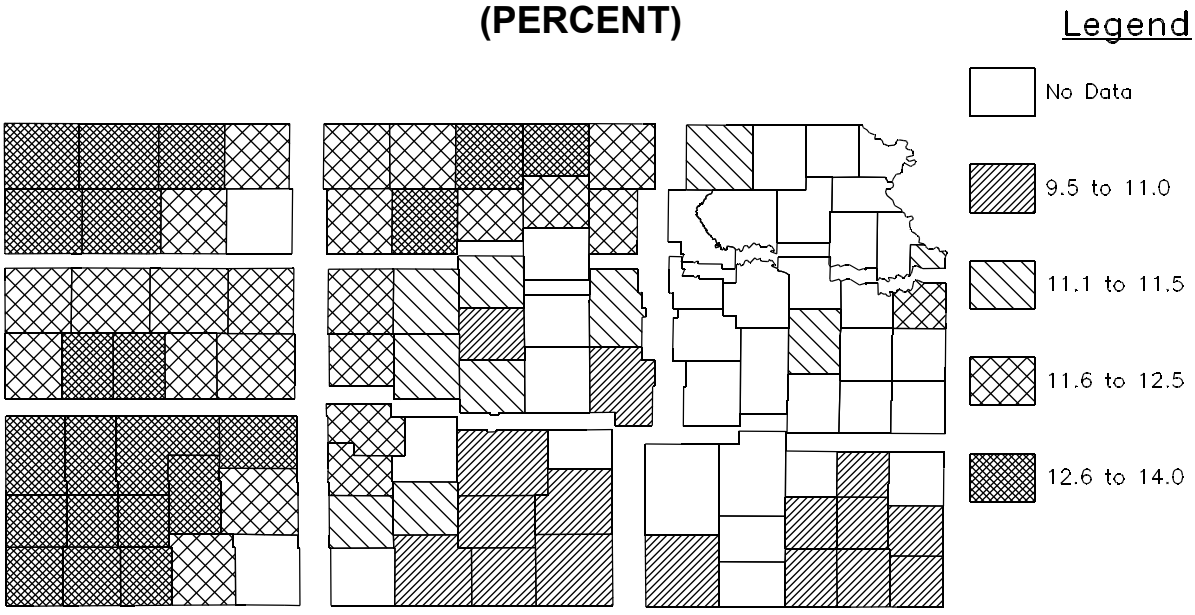
SAMPLE GRADE: Sample grade is wheat that does not meet the requirements for the grades U.S. Nos. 1, 2, 3, 4, or 5; or contains 31 or more insect-damaged kernels per 100 grams of wheat; or contains 4 or more stones or any number of stones which have an aggregate weight in excess of 0.1 percent of the sample weight, 1 or more pieces or glass, 2 or more crotalaria seeds, 1 or more castor beans, 3 or more particles of an unknown foreign substance or a commonly recognized harmful toxic substance, 1 or more rodent pellets, bird droppings, or equivalent quantity of other animal filth per 1,000 grams of wheat; or has a musty, sour, or commercially objectionable foreign odor except smut or garlic odor; or is heating or otherwise of distinctly low quality.

PROTEIN CONTENT

The average protein content of the 2000 Kansas wheat crop was 11.9 percent, up 0.4 percent from last year's crop. This year's protein is below the 10-year average of 12.3 percent. By district, protein content ranged from 10.1 percent in the southeast district to 12.9 percent in the northwest district. Cheyenne led all counties, averaging 13.7 percent protein. Second highest was was a tie between Sherman and Thomas counties, each of which averaged 13.3 percent protein. Protein content by variety from Wheat Objective Yield samples is shown beginning on page 28. See the map below for average protein content by county.

WHEAT PROTEIN CONTENT - 2000

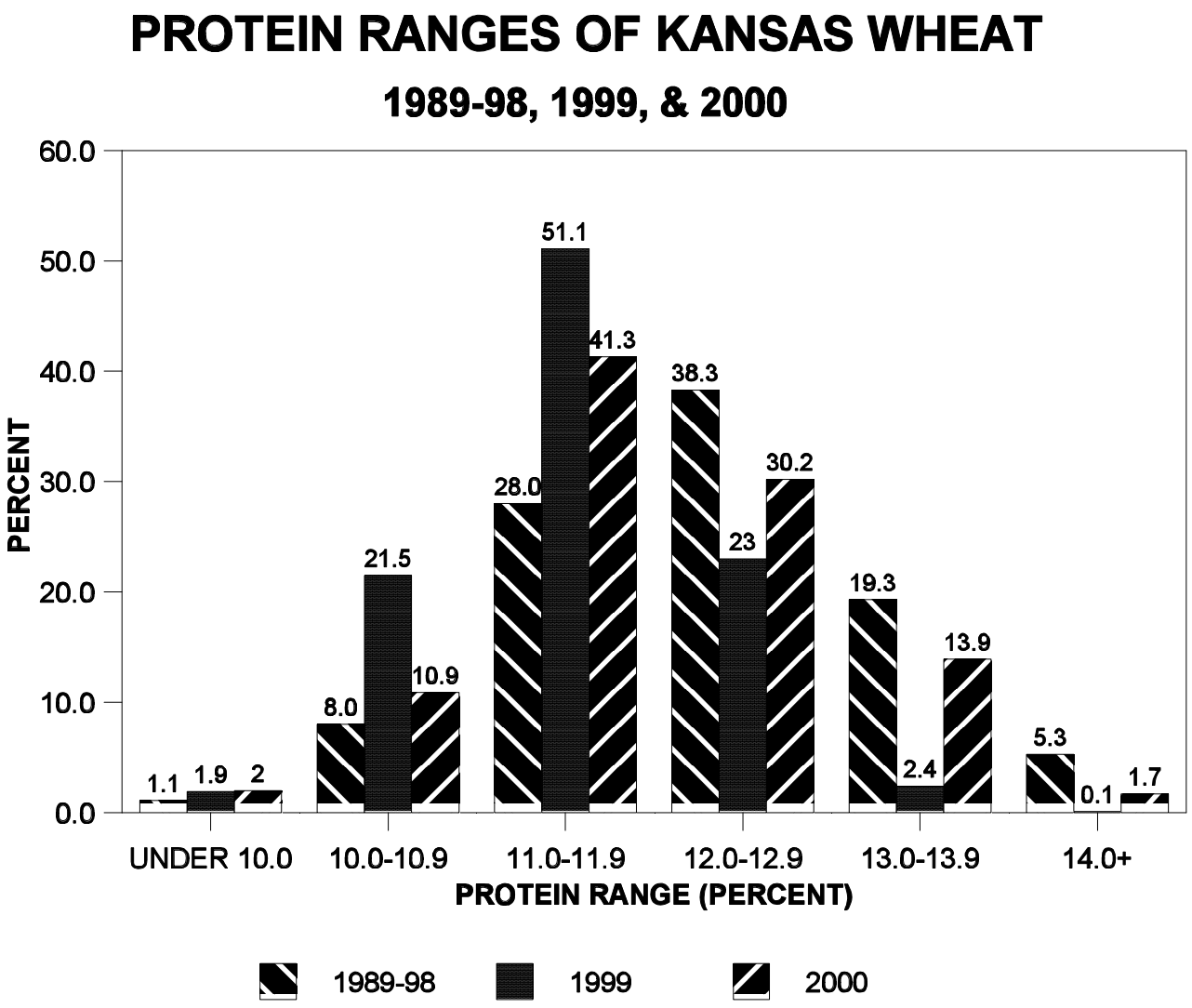
(PERCENT)



PROTEIN RANGES OF 2000 KANSAS WHEAT 1/

Districts	NW	WC	SW	NC	C	SC	NE	EC	SE	State
Production (000 bu.)	36,500	41,400	55,900	49,500	62,000	87,200	7,700	6,000	16,500	362,700
% Protein	- Percent -									
Under 10.0	0.0	0.0	0.0	0.0	0.0	2.7	0.5	0.0	28.5	2.0
10.0-10.9	0.1	8.4	0.4	0.9	11.9	15.4	23.4	18.9	70.2	10.9
11.0-11.9	9.8	24.6	12.0	47.6	71.8	57.9	75.0	79.2	1.3	41.3
12.0-12.9	26.5	41.6	58.7	40.3	16.1	22.6	1.1	1.9	0.0	30.2
13.0-13.9	52.3	24.6	26.1	10.8	0.2	1.4	0.0	0.0	0.0	13.9
14.0-Over	11.3	0.8	2.8	0.4	0.0	0.0	0.0	0.0	0.0	1.7
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

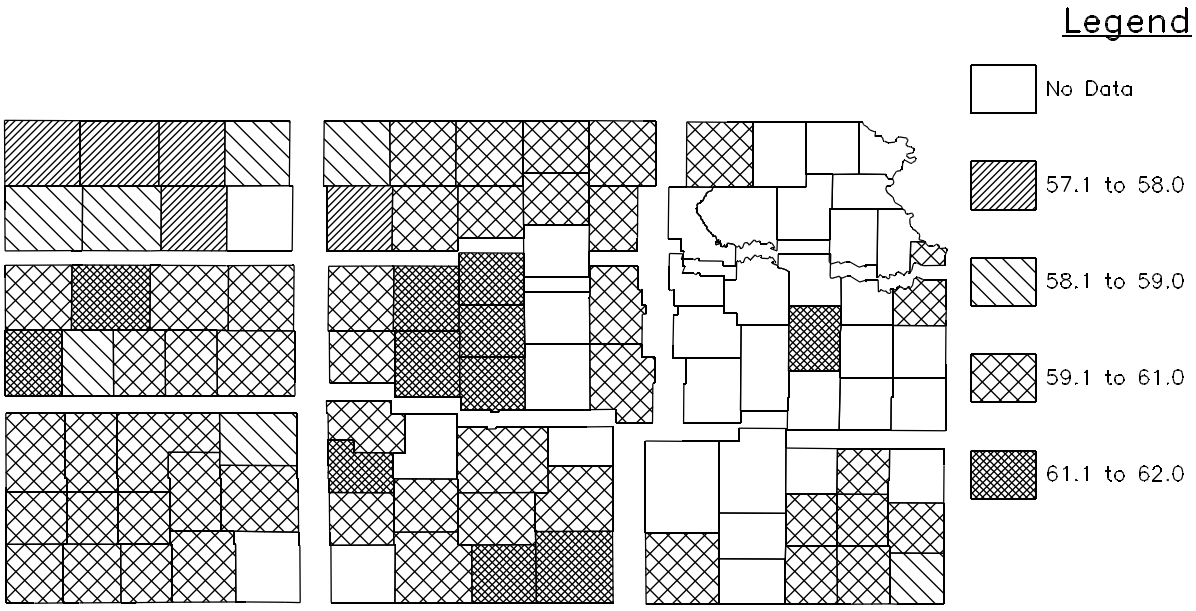
1/ Protein content adjusted to 12 percent moisture base.



TEST WEIGHT

The 2000 Kansas wheat crop averaged 59.9 pounds per bushel, compared with 60.2 pounds for the 1999 crop. The 10-year average for Kansas is 60.0 pounds per bushel. Harvest of the 2000 crop began in the south central part of the State the first week of June. Harvest progressed very rapidly and was nearing completion the first week of July with 94 percent of the crop harvested, compared to 33 percent last year and 44 percent for the average. Harvest was complete by mid-July. By district, test weights fell in a range from 57.8 pounds in the northwest to 61.1 pounds in the east central district. The south central and central districts tied for second highest in test weight at 60.9 pounds. Ellsworth County, with a test weight of 61.7 pounds, was the highest in the State. Osage County followed at 61.5 pounds. See the map below for average weight per bushel by county.

WHEAT TEST WEIGHT - 2000
(POUNDS PER BUSHEL)

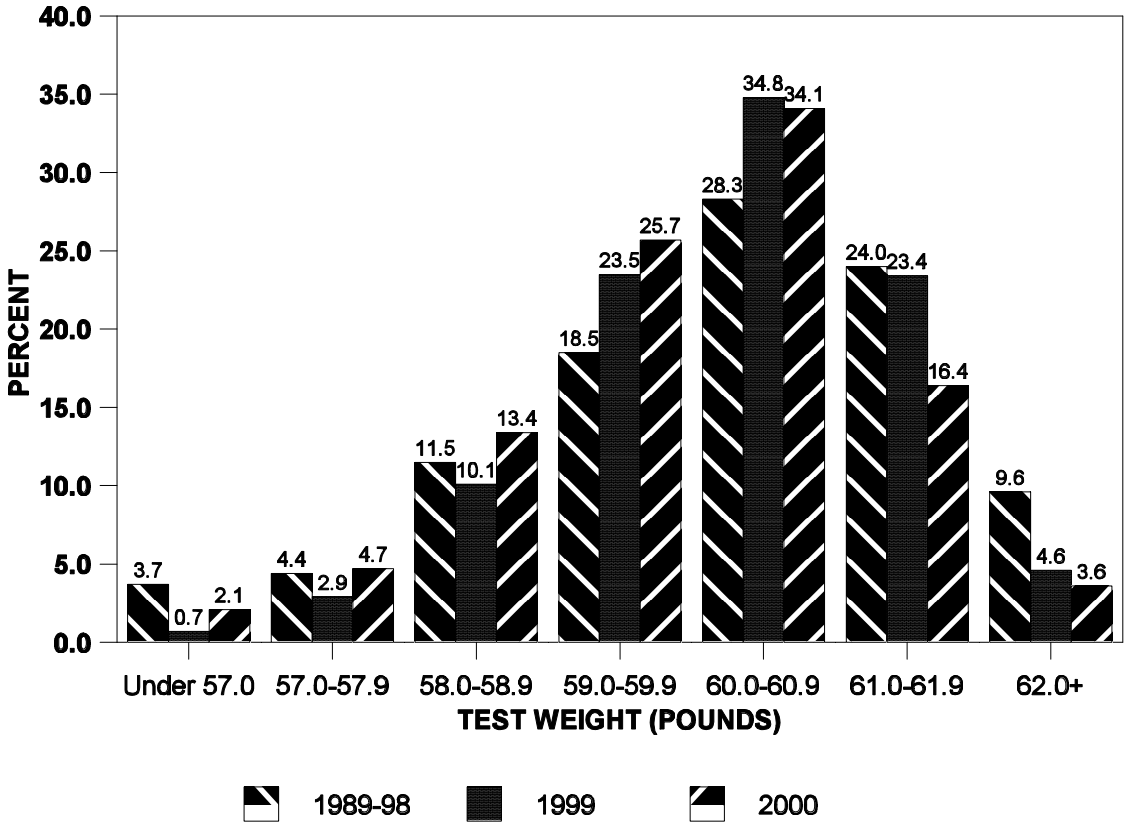


RANGES OF 2000 TEST WEIGHTS

Districts	NW	WC	SW	NC	C	SC	NE	EC	SE	State
Production (000 bu.)	36,500	41,400	55,900	49,500	62,000	87,200	7,700	6,000	16,500	362,700
lb/bushel	- Percent -									
Under 55.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
55.0-55.9	2.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2
56.0-56.9	14.7	0.1	0.2	0.8	0.0	0.0	0.0	0.0	1.1	1.8
57.0-57.9	30.2	2.9	1.7	4.6	0.1	0.5	0.5	0.0	6.1	4.7
58.0-58.9	35.4	25.4	15.8	18.2	1.0	3.4	0.0	0.0	22.6	13.4
59.0-59.9	12.5	33.7	47.1	32.5	9.5	23.3	2.7	0.0	35.5	25.7
60.0-60.9	3.5	28.9	30.5	34.5	39.6	53.0	30.8	1.9	18.9	34.1
61.0-61.9	1.0	8.6	4.2	8.2	40.0	14.5	66.0	83.0	11.0	16.4
62.0-Over	0.0	0.4	0.5	0.1	9.8	5.3	0.0	15.1	4.8	3.6
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TEST WEIGHT RANGES OF KANSAS WHEAT

1989-98, 1999, & 2000



WEIGHT, PROTEIN, AND MOISTURE

County and District	Samples Tested 2000 1/	Test Weight			Protein Content 2/			Moisture		
		Average 1989-98	1999	2000	Average 1989-98	1999	2000	Average 1989-98	1999	2000
CHEYENNE	161	60.1	61.3	57.6	12.5	12.1	13.7	11.0	11.2	11.2
DECATUR	137	59.9	58.6	57.3	12.5	11.9	12.8	11.3	10.9	11.4
GRAHAM	*	60.3	*	*	12.0	*	*	11.3	*	*
NORTON	125	60.1	59.0	58.2	12.4	11.5	12.1	11.4	11.2	12.0
RAWLINS	153	60.1	59.6	57.6	12.3	11.8	12.7	11.0	10.6	10.9
SHERIDAN	10	60.9	*	57.3	13.1	*	11.8	10.6	*	11.4
SHERMAN	418	60.0	60.9	58.2	12.4	11.4	13.3	11.5	11.0	11.2
THOMAS	266	60.2	59.4	58.2	12.6	12.4	13.3	11.2	11.2	11.0
NORTHWEST	**1,270**	**60.1**	**59.8**	**57.8**	**12.5**	**11.9**	**12.9**	**11.3**	**11.0**	**11.2**
GOVE	406	60.1	60.2	59.6	12.4	11.4	12.3	11.3	12.1	11.3
GREELEY	7	61.0	59.3	61.3	11.4	13.5	11.6	11.1	11.9	10.3
LANE	275	60.2	60.6	59.3	11.9	12.0	12.0	11.4	12.5	11.4
LOGAN	25	60.6	60.3	61.1	12.1	11.5	11.7	11.0	11.5	11.2
NESS	134	60.1	60.1	59.9	11.9	11.7	12.1	12.0	13.3	11.2
SCOTT	452	60.5	60.6	59.4	12.0	11.8	12.7	11.6	12.1	11.3
TREGO	345	60.3	*	60.2	12.2	*	12.0	11.6	*	11.3
WALLACE	397	60.7	61.3	59.7	12.4	11.1	12.1	11.4	11.6	11.3
WICHITA	203	60.9	61.5	58.9	11.8	11.6	13.0	11.5	12.7	11.0
WEST CENTRAL	**2,244**	**60.5**	**60.4**	**60.0**	**12.1**	**11.9**	**12.2**	**11.5**	**12.3**	**11.1**
CLARK	*	60.0	60.7	*	12.6	11.8	*	11.7	12.5	*
FINNEY	1,155	60.3	60.2	59.4	12.2	11.8	12.8	11.2	11.9	11.2
FORD	1,147	60.4	60.4	59.7	12.6	11.4	12.3	11.7	12.3	11.9
GRANT	187	60.7	61.1	59.8	12.3	11.8	13.4	10.9	11.8	10.9
GRAY	243	60.4	60.7	59.1	12.7	11.6	12.8	11.3	11.9	11.7
HAMILTON	121	60.4	61.6	59.7	12.1	11.3	12.8	10.9	12.2	10.6
HASKELL	105	60.3	60.5	59.3	12.4	11.3	12.7	11.3	11.7	11.5
HODGEMAN	33	59.8	*	59.0	12.3	*	12.9	12.0	*	12.0
KEARNY	61	61.0	*	60.1	11.4	*	12.8	11.0	*	10.9
MEADE	480	60.3	60.7	59.6	12.8	12.1	12.4	11.8	12.4	12.0
MORTON	236	60.5	61.0	59.8	12.5	11.9	13.0	10.6	11.3	10.9
SEWARD	249	60.4	62.4	60.1	12.8	11.5	12.6	11.1	12.8	11.5
STANTON	482	60.3	61.2	59.9	12.3	11.4	12.9	10.7	11.3	10.3
STEVENS	31	60.4	61.7	60.0	12.6	12.3	12.9	10.9	11.8	11.0
SOUTHWEST	**4,530**	**60.4**	**60.9**	**59.6**	**12.5**	**11.6**	**12.8**	**11.2**	**12.0**	**11.3**
CLAY	6	60.1	60.4	59.7	12.1	10.7	11.9	11.7	12.4	11.9
CLOUD	1,078	59.1	*	60.4	12.1	*	11.6	11.8	*	12.7
JEWELL	36	59.6	61.1	59.5	12.6	11.2	12.6	11.8	12.0	12.5
MITCHELL	496	59.9	60.6	60.0	12.5	11.2	12.1	11.8	12.1	12.5
OSBORNE	431	59.7	60.1	59.1	12.6	11.6	12.6	11.8	12.3	11.9
OTTAWA	*	60.0	*	*	12.2	*	*	11.6	*	*
PHILLIPS	355	60.1	58.5	58.5	12.5	12.5	12.2	11.3	11.2	11.9
REPUBLIC	326	59.3	60.9	59.5	12.5	11.2	12.6	11.6	12.1	12.2
ROOKS	119	59.9	57.2	57.9	12.3	12.2	12.0	11.6	11.8	12.4
SMITH	306	60.1	59.2	59.1	12.6	11.9	12.2	11.6	12.1	12.2
WASHINGTON	27	59.3	*	59.4	12.2	*	12.1	11.8	*	12.6
NORTH CENTRAL	**3,180**	**59.7**	**59.7**	**59.3**	**12.5**	**11.5**	**12.2**	**11.7**	**12.0**	**12.3**
BARTON	261	59.8	61.5	61.2	12.9	12.5	11.5	11.8	13.0	11.6
DICKINSON	15	59.8	59.3	60.1	12.1	10.7	11.2	12.1	12.5	13.0
ELLIS	173	60.2	60.2	60.3	12.2	11.1	11.8	11.9	12.7	11.3
ELLSWORTH	51	59.7	61.1	61.7	12.5	10.8	10.8	11.7	13.0	12.4
LINCOLN	168	59.4	*	61.1	12.5	*	11.2	11.7	*	11.8
MCPHERSON	*	59.7	59.7	*	12.5	11.4	*	12.1	12.2	*
MARION	38	59.6	59.4	60.7	12.1	10.7	11.0	12.1	12.7	13.3
RICE	484	59.8	61.4	61.3	13.0	12.0	11.4	11.8	13.1	12.4
RUSH	481	60.1	60.7	60.5	12.2	11.8	11.7	11.8	12.3	10.9
RUSSELL	161	59.8	60.5	61.1	12.6	11.4	11.5	11.7	12.7	11.4
SALINE	*	60.3	*	*	12.2	*	*	11.6	*	*
CENTRAL	**1,832**	**59.9**	**60.4**	**60.9**	**12.5**	**11.4**	**11.4**	**11.9**	**12.7**	**12.1**

WEIGHT, PROTEIN, AND MOISTURE

County and District	Samples Tested 2000 1/	Test Weight			Protein Content 2/			Moisture		
		Average 1989-98	1999	2000	Average 1989-98	1999	2000	Average 1989-98	1999	2000
BARBER	48	59.8	58.3	61.0	12.4	10.5	10.4	11.7	12.2	12.6
COMANCHE	*	60.0	*	*	12.6	*	*	12.1	*	*
EDWARDS	41	60.4	60.4	61.2	12.6	11.4	12.2	11.9	13.1	11.7
HARPER	23	59.2	*	61.1	12.2	*	10.9	11.9	*	12.4
HARVEY	*	59.9	60.1	*	12.1	11.7	*	12.2	12.4	*
KINGMAN	131	60.4	60.7	60.9	12.3	10.2	10.6	11.7	12.5	12.8
KIOWA	270	60.2	60.5	60.0	12.8	11.1	11.5	12.0	12.6	12.7
PAWNEE	649	59.8	60.3	60.5	12.9	11.9	12.0	11.7	12.7	11.7
PRATT	97	59.8	60.0	59.9	13.1	10.3	11.4	11.6	12.7	12.6
RENO	*	60.3	60.8	*	12.5	11.4	*	11.8	11.8	*
SEDGWICK	386	60.3	59.8	60.2	12.4	10.9	11.0	11.8	12.2	12.4
STAFFORD	*	60.0	*	*	13.0	*	*	11.7	*	*
SUMNER	*	59.6	59.3	*	12.2	10.6	*	11.9	12.3	*
SOUTH CENTRAL	**1,648**	**60.0**	**60.0**	**60.9**	**12.5**	**10.9**	**10.8**	**11.8**	**12.4**	**12.3**
ATCHISON	*	59.6	59.1	*	12.1	11.4	*	12.4	11.8	*
BROWN	*	59.3	*	*	11.9	*	*	12.5	*	*
DONIPHAN	*	*	*	*	*	*	*	*	*	*
JACKSON	*	59.2	*	*	13.4	*	*	11.5	*	*
JEFFERSON	*	58.9	*	*	14.8	*	*	12.7	*	*
LEAVENWORTH	*	*	*	*	*	*	*	*	*	*
MARSHALL	19	59.3	59.6	60.6	12.1	10.9	11.2	12.2	12.5	12.4
NEMAHA	*	59.4	*	*	12.1	*	*	12.6	*	*
POTTAWATOMIE	*	59.4	*	*	12.4	*	*	12.0	*	*
RILEY	*	60.4	*	*	12.8	*	*	8.6	*	*
WYANDOTTE	169	59.6	58.7	61.0	11.5	10.3	11.1	12.4	12.7	12.0
NORTHEAST	**188**	**59.3**	**59.5**	**60.6**	**12.1**	**11.0**	**11.2**	**12.3**	**12.4**	**12.4**
ANDERSON	*	59.6	*	*	11.4	*	*	12.0	*	*
CHASE	*	60.4	*	*	12.1	*	*	11.2	*	*
COFFEY	*	59.7	*	*	11.2	*	*	12.6	*	*
DOUGLAS	*	58.7	*	*	12.0	*	*	13.4	*	*
FRANKLIN	*	60.6	*	*	11.4	*	*	12.3	*	*
GEARY	*	*	*	*	*	*	*	*	*	*
JOHNSON	*	59.9	*	*	12.3	*	*	11.9	*	*
LINN	*	59.5	*	*	11.9	*	*	12.0	*	*
LYON	*	59.0	*	*	13.4	*	*	12.7	*	*
MIAMI	*	*	*	*	*	*	*	*	*	*
MORRIS	*	59.2	*	*	12.7	*	*	12.2	*	*
OSAGE	52	59.5	*	61.5	11.9	*	11.2	12.8	*	13.2
SHAWNEE	*	59.9	59.8	*	11.9	10.9	*	12.2	12.3	*
WABAUNSEE	*	59.3	*	*	13.3	*	*	11.4	*	*
EAST CENTRAL	**53**	**59.7**	**59.8**	**61.1**	**12.0**	**10.9**	**11.4**	**12.3**	**12.3**	**12.7**
ALLEN	84	*	*	59.4	*	*	10.1	*	*	13.1
BOURBON	*	59.9	*	*	11.5	*	*	12.8	*	*
BUTLER	*	59.0	57.4	*	11.8	11.0	*	12.2	13.3	*
CHAUTAUQUA	*	*	*	*	*	*	*	*	*	*
CHEROKEE	182	59.0	*	58.6	10.6	*	10.0	13.3	*	13.4
COWLEY	126	59.4	58.3	60.5	11.9	10.9	10.2	12.0	12.5	12.9
CRAWFORD	163	59.1	*	59.3	11.1	*	10.2	13.0	*	13.1
ELK	*	57.7	*	*	11.8	*	*	13.0	*	*
GREENWOOD	*	57.9	*	*	12.4	*	*	12.7	*	*
LABETTE	122	58.1	*	59.8	10.5	*	9.9	13.1	*	13.3
MONTGOMERY	182	58.5	*	59.3	11.3	*	10.0	13.2	*	13.1
NEOSHO	337	58.8	*	59.9	11.2	*	10.2	13.1	*	12.9
WILSON	161	59.1	57.4	60.1	11.5	11.1	10.4	12.8	13.0	13.0
WOODSON	*	59.0	*	*	11.8	*	*	12.9	*	*
SOUTHEAST	**1,357**	**58.9**	**57.9**	**59.8**	**11.5**	**11.0**	**10.1**	**12.7**	**12.8**	**13.1**
STATE	16,302	60.0	60.2	59.9	12.3	11.5	11.9	11.7	12.2	11.8

1/Samples tested represent data from inspection certificates of railroad cars (truckloads are converted to carlot equivalents). Summarized data includes old crop and new crop wheat moving from first point of sale and inspected by the Kansas Grain Inspection Service, Inc. 2/ Adjusted to 12 percent moisture. * Not published due to insufficient data or no sample taken but included in district and State totals.

GRADES, DOCKAGE AND GRADE DEFECTS

Ninety-one percent of the 2000 wheat carlots sampled averaged number 2 or better, compared with 95 percent for 1999. Wheat grading number 1, at 39 percent, was down 22 points from the 61 percent for 1999. Samples grading number 2, at 52 percent, was up 18 points from 34 percent for 1999. The east central district of the State had the best average, with 99 percent of the samples grading number 1. The central and northeast districts tied for second with 88 percent of the samples grading number 1. The northwest had the lowest average grading number 1, with 5 percent. Eighty-nine percent of all samples had less than 0.9 percent dockage, compared with 90 percent in 1999. Total defects, at 2.1, were up from 1999, at 1.6 percent.

PERCENTAGE OF KANSAS WHEAT IN EACH GRADE

Year	District									State
	NW	WC	SW	NC	C	SC	NE	EC	SE	
					Grade No. 1					
1993	34	53	81	24	38	44	5	35	9	47
1994	27	56	74	28	79	60	75	70	83	57
1995	64	28	2	23	3	5	1	48	1	16
1996	48	73	64	63	60	49	19	40	36	55
1997	71	80	46	90	90	63	92	77	63	72
1998	90	92	90	81	91	88	73	80	42	88
1999	58	73	74	51	63	46	17	39	1	61
2000	5	34	25	42	88	57	88	99	41	39
					Grade No. 2					
1993	53	41	18	35	45	45	38	41	59	39
1994	67	42	25	53	18	31	23	28	14	36
1995	33	61	37	55	50	34	43	34	23	43
1996	38	20	32	30	38	46	45	60	51	38
1997	20	15	47	7	8	29	8	13	29	23
1998	9	7	9	18	8	9	27	20	52	11
1999	35	26	25	38	34	47	78	60	54	34
2000	49	63	71	51	12	39	12	1	50	52
					All Other Grades					
1993	13	6	1	41	17	11	57	24	32	14
1994	6	2	1	19	3	9	2	2	2	7
1995	3	11	61	22	47	61	56	18	76	41
1996	14	7	4	7	2	5	36	0	13	7
1997	9	5	7	3	2	8	0	10	8	5
1998	1	1	1	1	1	3	0	0	6	1
1999	7	1	1	11	3	7	5	1	47	5
2000	46	3	4	7	0	4	0	0	9	9

KANSAS WHEAT DOCKAGE PERCENTAGES

Year	Number of Cars sampled 1/	Percent of Samples with Dockage				Average Dockage of Samples	
		Zero Percent	0.1-0.4 Percent	0.5-0.9 Percent	Over 0.9 Percent	Over 0.9%	All
1993	15,573	0	26	57	17	1.5	0.7
1994	17,467	0	31	58	11	1.5	0.6
1995	9,879	0	14	59	27	1.7	0.9
1996	14,735	0	20	47	33	2.0	1.1
1997	19,601	0	51	39	10	4.1	0.8
1998	18,190	1	36	56	7	1.3	0.6
1999	12,735	0	47	43	10	1.4	0.6
2000	16,302	0	28	61	11	1.3	0.6

1/ Includes truckloads converted to carlot equivalents.

GRADE DEFECT PERCENTAGES OF KANSAS WHEAT

Year	District									State
	NW	WC	SW	NC	C	SC	NE	EC	SE	
Damaged Kernels										
1993	0.1	0.1	0.1	0.5	0.3	0.2	1.8	1.3	2.0	0.3
1994	0.1	0.1	0.1	0.3	0.2	0.2	0.5	0.5	0.4	0.2
1995	0.1	0.2	0.3	0.7	0.4	0.3	2.6	0.5	0.8	0.4
1996	0.2	0.2	0.5	0.3	0.3	0.2	1.8	0.5	0.3	0.3
1997	0.1	0.2	0.2	0.0	0.1	0.2	0.2	0.3	0.1	0.1
1998	0.2	0.2	0.2	0.1	0.1	0.1	0.3	0.7	0.9	0.2
1999	0.1	0.1	0.3	0.3	0.7	0.6	0.8	0.9	1.8	0.4
2000	0.1	0.1	0.2	0.2	0.2	0.3	0.1	1.3	0.9	0.2
Foreign Material										
1993	0.1	0.0	0.0	0.1	0.2	0.3	0.1	0.2	0.2	0.1
1994	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.1	0.1	0.1
1995	0.0	0.0	0.1	0.2	0.2	0.3	0.1	0.1	0.2	0.2
1996	0.0	0.0	0.1	0.3	0.2	0.2	0.1	0.1	0.2	0.2
1997	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1
1998	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1
1999	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.1	0.1	0.1
2000	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.2	0.1	0.1
Shrunken and Broken Kernels										
1993	1.5	2.0	2.2	1.7	1.7	1.6	1.1	2.0	1.1	1.8
1994	2.3	2.3	2.3	2.1	2.0	2.0	1.3	1.5	1.3	2.1
1995	2.4	2.9	2.8	2.4	2.6	2.9	2.0	2.3	2.9	2.7
1996	1.7	1.7	1.4	1.5	1.4	1.9	1.2	1.4	1.2	1.6
1997	1.3	1.5	1.5	0.9	1.0	1.3	0.9	0.9	1.1	1.2
1998	1.4	1.7	1.9	1.3	1.4	1.6	0.8	1.0	1.2	1.5
1999	1.6	1.2	1.2	0.9	0.8	1.1	0.9	1.1	1.1	1.1
2000	2.0	2.1	2.2	1.5	1.5	1.5	1.0	1.1	0.8	1.8
Total Defects 1/										
1993	1.7	2.1	2.3	2.3	2.2	2.1	3.0	3.5	3.3	2.2
1994	2.4	2.4	2.5	2.5	2.4	2.5	1.9	2.1	1.8	2.4
1995	2.5	3.1	3.2	3.3	3.2	3.5	4.7	2.9	3.9	3.3
1996	1.9	1.9	2.0	2.1	1.9	2.3	3.1	2.0	1.7	2.1
1997	1.4	1.8	1.8	1.0	1.2	1.6	1.1	1.3	1.3	1.4
1998	1.6	2.0	2.1	1.6	1.6	1.8	1.1	1.8	2.2	1.8
1999	1.7	1.3	1.5	1.3	1.7	1.8	1.8	2.1	3.0	1.6
2000	2.2	2.3	2.5	1.8	1.8	1.9	1.1	2.5	1.8	2.1

1/ Percentages by defect type may not add to total defects due to rounding.

WHEAT GRADES AND DOCKAGE - 2000

County and District	Grade						Dockage				Average % of Dock. Sample	
	1	2	3	4	5	Sample	Zero %	0.1-0.4%	0.5-0.9%	Over 0.9%	Over 0.9%	All
	- - - - - - - Percent of Total 1/- - - - - - -						- - - - - Percent of Total 1/- - - - -					
CHEYENNE	7	24	65	4	0	0	0	2	71	27	1.2	0.8
DECATUR	2	27	58	13	0	0	0	7	71	22	1.1	0.8
GRAHAM	*	*	*	*	*	*	*	*	*	*	*	*
NORTON	3	51	42	4	0	0	0	12	77	11	1.3	0.7
RAWLINS	0	44	54	2	0	0	0	12	83	5	1.1	0.6
SHERIDAN	0	10	90	0	0	0	0	40	60	0	0.0	0.5
SHERMAN	9	51	40	0	0	0	0	3	65	32	1.2	0.9
THOMAS	1	68	29	2	0	0	0	11	80	9	1.0	0.7
NORTHWEST	**5**	**49**	**43**	**3**	**0**	**0**	**0**	**7**	**73**	**20**	**1.1**	**0.7**
GOVE	32	67	1	0	0	0	0	12	72	16	1.2	0.7
GREELEY	86	14	0	0	0	0	0	29	71	0	0.0	0.5
LANE	10	86	3	1	0	0	0	8	71	21	1.1	0.8
LOGAN	100	0	0	0	0	0	0	0	100	0	0.0	0.7
NESS	47	53	0	0	0	0	0	5	91	4	1.1	0.7
SCOTT	23	76	1	0	0	0	0	18	65	17	1.1	0.7
TREGO	72	27	1	0	0	0	0	10	87	3	1.1	0.6
WALLACE	44	47	9	0	0	0	0	0	74	26	1.1	0.8
WICHITA	12	80	8	0	0	0	0	20	68	12	1.0	0.6
WEST CENTRAL .	**34**	**63**	**3**	**0**	**0**	**0**	**0**	**11**	**74**	**15**	**1.1**	**0.7**
CLARK	*	*	*	*	*	*	*	*	*	*	*	*
FINNEY	9	88	3	0	0	0	0	1	65	34	1.3	0.9
FORD	32	65	3	0	0	0	0	8	88	4	1.1	0.6
GRANT	24	73	3	0	0	0	0	10	63	27	1.1	0.8
GRAY	21	72	7	0	0	0	0	33	47	20	1.3	0.7
HAMILTON	32	68	0	0	0	0	0	10	84	6	1.1	0.7
HASKELL	25	72	3	0	0	0	0	18	65	17	1.2	0.7
HODGEMAN	6	91	3	0	0	0	0	42	58	0	0.0	0.5
KEARNY	46	51	3	0	0	0	0	28	64	8	1.2	0.6
MEADE	34	49	13	4	0	0	0	19	65	16	1.2	0.7
MORTON	41	56	2	1	0	0	0	12	79	9	1.1	0.7
SEWARD	35	49	14	1	1	0	0	7	80	13	1.2	0.7
STANTON	32	67	1	0	0	0	0	7	78	15	1.1	0.8
STEVENS	52	48	0	0	0	0	0	0	55	45	1.1	0.9
SOUTHWEST	**25**	**71**	**4**	**0**	**0**	**0**	**0**	**9**	**74**	**17**	**1.2**	**0.7**
CLAY	17	83	0	0	0	0	0	0	83	17	1.0	0.7
CLOUD	73	26	1	0	0	0	0	77	23	0	1.2	0.4
JEWELL	19	81	0	0	0	0	0	47	53	0	0.0	0.5
MITCHELL	58	40	1	1	0	0	0	33	67	0	1.0	0.5
OSBORNE	14	78	7	1	0	0	0	31	66	3	1.1	0.5
OTTAWA	*	*	*	*	*	*	*	*	*	*	*	*
PHILLIPS	5	71	23	1	0	0	0	30	58	12	1.2	0.6
REPUBLIC	28	69	3	0	0	0	0	36	60	4	1.3	0.5
ROOKS	5	40	55	0	0	0	0	14	82	4	1.2	0.6
SMITH	20	73	7	0	0	0	0	59	39	2	1.9	0.5
WASHINGTON	8	85	7	0	0	0	0	56	44	0	0.0	0.5
NORTH CENTRAL	**42**	**51**	**7**	**0**	**0**	**0**	**0**	**49**	**49**	**2**	**1.2**	**0.5**
BARTON	92	8	0	0	0	0	0	28	64	8	1.3	0.6
DICKINSON	67	33	0	0	0	0	0	100	0	0	0.0	0.3
ELLIS	75	25	0	0	0	0	1	20	78	1	1.0	0.6
ELLSWORTH	100	0	0	0	0	0	2	57	41	0	0.0	0.4
LINCOLN	89	11	0	0	0	0	0	52	46	2	1.0	0.5
MCPHERSON	*	*	*	*	*	*	*	*	*	*	*	*
MARION	92	8	0	0	0	0	0	76	24	0	0.0	0.4
RICE	96	4	0	0	0	0	0	61	38	1	1.1	0.4
RUSH	75	24	1	0	0	0	0	20	76	4	1.1	0.6
RUSSELL	96	4	0	0	0	0	0	49	44	7	1.1	0.5
SALINE	*	*	*	*	*	*	*	*	*	*	*	*
CENTRAL	**88**	**12**	**0**	**0**	**0**	**0**	**0**	**40**	**56**	**4**	**1.1**	**0.5**

WHEAT GRADES AND DOCKAGE - 2000

County and District	Grade						Dockage				Average % of Dock. Sample	
	1	2	3	4	5	Sample	Zero %	0.1-0.4%	0.5-0.9%	Over 0.9%	Over 0.9%	All
	- - - - - - - Percent of Total 1/- - - - - - -						- - - - - Percent of Total 1/- - - - -					
BARBER	88	10	2	0	0	0	0	67	18	15	2.5	0.7
COMANCHE	*	*	*	*	*	*	*	*	*	*	*	*
EDWARDS	88	10	2	0	0	0	0	63	37	0	0.0	0.4
HARPER	74	22	4	0	0	0	0	83	13	4	1.7	0.4
HARVEY	*	*	*	*	*	*	*	*	*	*	*	*
KINGMAN	79	16	5	0	0	0	1	74	25	0	0.0	0.4
KIOWA	60	39	1	0	0	0	0	46	54	0	1.3	0.5
PAWNEE	69	30	1	0	0	0	0	18	75	7	1.1	0.6
PRATT	51	42	7	0	0	0	0	68	31	1	1.2	0.4
RENO	*	*	*	*	*	*	*	*	*	*	*	*
SEDGWICK	30	61	9	0	0	0	0	84	16	0	0.0	0.4
STAFFORD	*	*	*	*	*	*	*	*	*	*	*	*
SUMNER	*	*	*	*	*	*	*	*	*	*	*	*
SOUTH CENTRAL	**57**	**39**	**4**	**0**	**0**	**0**	**0**	**57**	**40**	**3**	**1.6**	**0.4**
ATCHISON	*	*	*	*	*	*	*	*	*	*	*	*
BROWN	*	*	*	*	*	*	*	*	*	*	*	*
DONIPHAN	*	*	*	*	*	*	*	*	*	*	*	*
JACKSON	*	*	*	*	*	*	*	*	*	*	*	*
JEFFERSON	*	*	*	*	*	*	*	*	*	*	*	*
LEAVENWORTH	*	*	*	*	*	*	*	*	*	*	*	*
MARSHALL	89	11	0	0	0	0	0	74	15	11	1.4	0.5
NEMAHA	*	*	*	*	*	*	*	*	*	*	*	*
POTTAWATOMIE	*	*	*	*	*	*	*	*	*	*	*	*
RILEY	*	*	*	*	*	*	*	*	*	*	*	*
WYANDOTTE	76	23	1	0	0	0	0	21	71	8	1.1	0.6
NORTHEAST	**88**	**12**	**0**	**0**	**0**	**0**	**0**	**68**	**22**	**10**	**1.4**	**0.5**
ANDERSON	*	*	*	*	*	*	*	*	*	*	*	*
CHASE	*	*	*	*	*	*	*	*	*	*	*	*
COFFEY	*	*	*	*	*	*	*	*	*	*	*	*
DOUGLAS	*	*	*	*	*	*	*	*	*	*	*	*
FRANKLIN	*	*	*	*	*	*	*	*	*	*	*	*
GEARY	*	*	*	*	*	*	*	*	*	*	*	*
JOHNSON	*	*	*	*	*	*	*	*	*	*	*	*
LINN	*	*	*	*	*	*	*	*	*	*	*	*
LYON	*	*	*	*	*	*	*	*	*	*	*	*
MIAMI	*	*	*	*	*	*	*	*	*	*	*	*
MORRIS	*	*	*	*	*	*	*	*	*	*	*	*
OSAGE	100	0	0	0	0	0	0	87	13	0	0.0	0.3
SHAWNEE	*	*	*	*	*	*	*	*	*	*	*	*
WABAUNSEE	*	*	*	*	*	*	*	*	*	*	*	*
EAST CENTRAL	**99**	**1**	**0**	**0**	**0**	**0**	**0**	**86**	**14**	**0**	**0.0**	**0.4**
ALLEN	13	87	0	0	0	0	0	86	13	1	1.2	0.4
BOURBON	*	*	*	*	*	*	*	*	*	*	*	*
BUTLER	*	*	*	*	*	*	*	*	*	*	*	*
CHAUTAUQUA	*	*	*	*	*	*	*	*	*	*	*	*
CHEROKEE	24	26	47	3	0	0	0	49	43	8	2.1	0.6
COWLEY	65	35	0	0	0	0	0	44	4	52	2.2	1.3
CRAWFORD	13	77	9	1	0	0	1	69	29	1	1.1	0.4
ELK	*	*	*	*	*	*	*	*	*	*	*	*
GREENWOOD	*	*	*	*	*	*	*	*	*	*	*	*
LABETTE	46	51	3	0	0	0	0	30	50	20	2.0	0.8
MONTGOMERY	18	77	4	1	0	0	0	56	33	11	1.7	0.6
NEOSHO	39	61	0	0	0	0	0	80	15	5	1.7	0.4
WILSON	51	47	1	1	0	0	0	84	14	2	1.9	0.4
WOODSON	*	*	*	*	*	*	*	*	*	*	*	*
SOUTHEAST	**41**	**50**	**8**	**1**	**0**	**0**	**0**	**59**	**22**	**19**	**1.9**	**0.8**
STATE	39	52	8	1	0	0	0	28	61	11	1.3	0.6

1/ May not add due to rounding. *Not published due to insufficient data or no sample taken, but included in district and State totals.

GRADE DEFECT PERCENTAGES

County and District	Samples Tested 2000 1/	Total Damaged Kernels			Foreign Material			Shrunken and Broken Kernels			Total Defects 2/		
		Average 1989-98	1999	2000	Average 1989-98	1999	2000	Average 1989-98	1999	2000	Average 1989-98	1999	2000
CHEYENNE	161	0.1	0.1	0.1	0.0	0.0	0.0	2.0	1.9	2.7	2.1	2.0	2.9
DECATUR	137	0.1	0.1	0.1	0.0	0.0	0.0	1.7	1.4	1.7	1.9	1.5	1.8
GRAHAM	*	0.1	*	*	0.1	*	*	2.0	*	*	2.2	*	*
NORTON	125	0.1	0.2	0.6	0.1	0.1	0.1	1.7	1.3	1.5	1.9	1.6	2.1
RAWLINS	153	0.1	0.1	0.1	0.0	0.0	0.0	1.9	1.6	2.3	2.0	1.7	2.4
SHERIDAN	10	0.0	*	0.0	0.0	*	0.0	1.9	*	1.6	1.9	*	1.6
SHERMAN	418	0.1	0.0	0.0	0.0	0.0	0.0	1.8	1.8	2.2	1.9	1.9	2.3
THOMAS	266	0.1	0.1	0.0	0.0	0.0	0.0	1.9	1.5	2.1	2.0	1.6	2.2
NORTHWEST	**1,270**	**0.0**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**1.8**	**1.6**	**2.0**	**2.0**	**1.7**	**2.2**
GOVE	406	0.1	0.1	0.1	0.0	0.0	0.0	1.8	1.0	2.1	1.9	1.1	2.2
GREELEY	7	0.3	0.0	0.2	0.1	0.0	0.0	1.9	1.0	2.0	2.3	1.0	2.2
LANE	275	0.2	0.2	0.2	0.0	0.0	0.1	2.1	1.2	2.2	2.4	1.4	2.5
LOGAN	25	0.0	0.0	0.1	0.0	0.0	0.0	1.8	1.4	1.7	1.8	1.5	1.9
NESS	134	0.3	0.3	0.1	0.0	0.1	0.0	2.0	1.0	2.2	2.3	1.3	2.4
SCOTT	452	0.2	0.2	0.1	0.0	0.0	0.0	1.8	1.3	2.4	2.0	1.6	2.5
TREGO	345	0.2	*	0.1	0.1	*	0.1	2.1	*	2.1	2.4	*	2.2
WALLACE	397	0.1	0.2	0.2	0.0	0.0	0.0	1.8	1.6	2.1	1.9	1.8	2.3
WICHITA	203	0.2	0.1	0.1	0.0	0.0	0.0	2.0	1.1	2.6	2.3	1.2	2.8
WEST CENTRAL	**2,244**	**0.2**	**0.1**	**0.1**	**0.0**	**0.0**	**0.0**	**2.0**	**1.2**	**2.1**	**2.2**	**1.3**	**2.3**
CLARK	*	0.5	0.4	*	0.0	0.1	*	2.0	1.0	*	2.6	1.5	*
FINNEY	1,155	0.2	0.3	0.2	0.1	0.0	0.2	1.9	1.0	2.7	2.1	1.3	3.0
FORD	1,147	0.3	0.3	0.5	0.1	0.1	0.1	2.0	1.0	2.0	2.4	1.3	2.6
GRANT	187	0.3	0.3	0.2	0.0	0.1	0.0	2.0	1.3	3.0	2.3	1.6	3.2
GRAY	243	0.3	0.3	0.1	0.0	0.0	0.0	1.9	1.0	2.2	2.1	1.3	2.3
HAMILTON	121	0.3	0.2	0.1	0.0	0.0	0.0	2.1	1.4	2.8	2.4	1.7	2.9
HASKELL	105	0.4	0.6	0.1	0.0	0.0	0.0	1.7	1.3	2.2	2.1	1.9	2.3
HODGEMAN	33	1.2	*	0.0	0.0	*	0.1	2.0	*	1.8	3.3	*	1.9
KEARNY	61	0.1	*	0.1	0.1	*	0.0	1.7	*	1.8	1.9	*	2.0
MEADE	480	0.6	0.4	0.2	0.1	0.1	0.3	1.9	1.0	1.5	2.5	1.4	2.0
MORTON	236	0.4	0.2	0.3	0.0	0.0	0.1	2.1	1.6	2.2	2.5	1.8	2.5
SEWARD	249	0.3	0.3	0.3	0.1	0.0	0.4	1.9	1.0	2.0	2.3	1.3	2.6
STANTON	482	0.2	0.2	0.1	0.0	0.0	0.0	2.2	1.6	2.5	2.5	1.8	2.7
STEVENS	31	0.4	0.3	0.1	0.0	0.0	0.0	2.0	1.1	2.0	2.4	1.3	2.1
SOUTHWEST	**4,530**	**0.3**	**0.3**	**0.2**	**0.1**	**0.0**	**0.1**	**1.9**	**1.2**	**2.2**	**2.3**	**1.5**	**2.5**
CLAY	6	0.1	0.4	0.0	0.2	0.2	0.1	1.9	0.9	1.6	2.1	1.4	1.7
CLOUD	1,078	0.3	*	0.3	0.2	*	0.2	1.9	*	1.5	2.5	*	2.0
JEWELL	36	0.3	0.4	0.0	0.1	0.3	0.1	1.7	0.9	1.5	2.2	1.6	1.6
MITCHELL	496	0.2	0.3	0.1	0.2	0.1	0.1	1.7	0.8	1.5	2.1	1.2	1.7
OSBORNE	431	0.3	0.2	0.1	0.2	0.1	0.1	1.8	1.0	1.7	2.2	1.3	1.9
OTTAWA	*	0.1	*	*	0.3	*	*	1.7	*	*	2.0	*	*
PHILLIPS	355	0.2	0.4	0.1	0.1	0.0	0.0	1.7	1.1	1.5	2.0	1.6	1.7
REPUBLIC	326	0.6	0.4	0.1	0.2	0.1	0.1	1.8	1.0	1.4	2.5	1.5	1.6
ROOKS	119	0.1	0.2	0.0	0.1	0.0	0.1	1.7	0.9	1.5	1.9	1.1	1.5
SMITH	306	0.2	0.1	0.0	0.1	0.0	0.1	1.5	0.9	1.3	1.8	1.1	1.4
WASHINGTON	27	0.7	*	1.2	0.1	*	0.1	1.7	*	1.3	2.4	*	2.6
NORTH CENTRAL	**3,180**	**0.3**	**0.3**	**0.2**	**0.2**	**0.1**	**0.1**	**1.8**	**0.9**	**1.5**	**2.2**	**1.3**	**1.8**
BARTON	261	0.6	0.8	0.1	0.2	0.1	0.0	1.8	0.6	1.7	2.5	1.6	1.9
DICKINSON	15	0.2	0.8	0.3	0.1	0.1	0.1	1.5	1.1	1.0	1.9	2.1	1.4
ELLIS	173	0.2	0.4	0.1	0.1	0.1	0.1	1.9	0.8	1.8	2.2	1.4	2.0
ELLSWORTH	51	0.2	0.5	0.2	0.1	0.2	0.1	1.8	0.7	1.2	2.2	1.3	1.5
LINCOLN	168	0.3	*	0.1	0.2	*	0.1	1.8	*	1.5	2.3	*	1.6
MCPHERSON	*	0.4	1.2	*	0.2	0.2	*	1.5	1.0	*	2.1	2.4	*
MARION	38	0.4	1.1	0.3	0.2	0.1	0.1	1.6	1.0	1.2	2.2	2.2	1.6
RICE	484	0.9	0.8	0.1	0.1	0.1	0.1	1.4	0.7	1.6	2.5	1.6	1.8
RUSH	481	0.5	0.7	0.2	0.1	0.1	0.1	1.9	0.7	1.9	2.5	1.4	2.2
RUSSELL	161	0.3	0.4	0.2	0.1	0.1	0.1	1.9	0.8	1.5	2.3	1.3	1.8
SALINE	*	0.4	*	*	0.2	*	*	1.9	*	*	2.6	*	*
CENTRAL	**1,832**	**0.5**	**0.7**	**0.2**	**0.2**	**0.2**	**0.1**	**1.7**	**0.8**	**1.5**	**2.4**	**1.7**	**1.8**

GRADE DEFECT PERCENTAGES

County and District	Samples Tested 2000 1/	Total Damaged Kernels			Foreign Material			Shrunken and Broken Kernels			Total Defects 2/		
		Average 1989-98	1999	2000	Average 1989-98	1999	2000	Average 1989-98	1999	2000	Average 1989-98	1999	2000
BARBER	48	0.3	0.0	0.1	0.2	0.1	0.1	1.9	1.0	1.3	2.4	1.1	1.4
COMANCHE	*	0.4	*	*	0.2	*	*	1.9	*	*	2.4	*	*
EDWARDS	41	0.4	0.2	0.1	0.0	0.0	0.0	1.8	0.8	1.3	2.2	1.1	1.5
HARPER	23	0.2	*	0.0	0.4	*	0.2	1.9	*	1.8	2.6	*	2.0
HARVEY	*	0.4	0.9	*	0.2	0.1	*	1.5	1.0	*	2.1	1.9	*
KINGMAN	131	0.2	0.4	0.1	0.3	0.2	0.2	1.6	1.0	1.3	2.1	1.5	1.6
KIOWA	270	0.5	0.2	0.6	0.1	0.1	0.1	1.7	0.9	1.3	2.3	1.2	2.0
PAWNEE	649	0.3	0.7	0.2	0.1	0.1	0.1	1.9	0.9	1.9	2.3	1.7	2.1
PRATT	97	0.6	0.4	0.1	0.2	0.3	0.1	1.7	1.1	1.5	2.5	1.8	1.6
RENO	*	0.6	1.2	*	0.3	0.3	*	1.8	1.5	*	2.7	3.1	*
SEDGWICK	386	0.5	0.4	1.7	0.3	0.1	0.2	1.8	1.1	1.6	2.6	1.7	3.5
STAFFORD	*	0.6	*	*	0.2	*	*	1.6	*	*	2.4	*	*
SUMNER	*	0.2	0.6	*	0.2	0.1	*	1.9	1.0	*	2.3	1.7	*
SOUTH CENTRAL	**1,648**	**0.4**	**0.6**	**0.3**	**0.2**	**0.2**	**0.2**	**1.8**	**1.1**	**1.5**	**2.4**	**1.8**	**1.9**
ATCHISON	*	0.8	2.0	*	0.1	0.1	*	1.3	1.2	*	2.2	3.3	*
BROWN	*	0.9	*	*	0.0	*	*	1.1	*	*	2.1	*	*
DONIPHAN	*	0.0	*	*	0.0	*	*	0.0	*	*	0.0	*	*
JACKSON	*	0.5	*	*	0.1	*	*	0.8	*	*	1.4	*	*
JEFFERSON	*	0.2	*	*	0.1	*	*	1.2	*	*	1.5	*	*
LEAVENWORTH	*	0.0	*	*	0.0	*	*	0.0	*	*	0.0	*	*
MARSHALL	19	0.7	0.6	0.1	0.1	0.1	0.0	1.4	0.9	1.0	2.2	1.6	1.1
NEMAHA	*	1.0	*	*	0.1	*	*	1.6	*	*	2.7	*	*
POTTAWATOMIE	*	0.5	*	*	0.1	*	*	1.3	*	*	1.8	*	*
RILEY	*	0.2	*	*	0.1	*	*	2.3	*	*	2.6	*	*
WYANDOTTE	169	1.2	1.3	1.2	0.1	0.2	0.1	1.5	0.8	1.4	2.8	2.3	2.7
NORTHEAST	**188**	**0.9**	**0.8**	**0.1**	**0.1**	**0.1**	**0.0**	**1.4**	**0.9**	**1.0**	**2.4**	**1.8**	**1.1**
ANDERSON	*	0.7	*	*	0.0	*	*	0.6	*	*	1.3	*	*
CHASE	*	0.1	*	*	0.0	*	*	2.0	*	*	2.2	*	*
COFFEY	*	0.6	*	*	0.1	*	*	1.1	*	*	1.8	*	*
DOUGLAS	*	1.5	*	*	0.1	*	*	1.1	*	*	2.7	*	*
FRANKLIN	*	0.5	*	*	0.0	*	*	1.1	*	*	1.6	*	*
GEARY	*	0.0	*	*	0.0	*	*	0.0	*	*	0.0	*	*
JOHNSON	*	0.7	*	*	0.1	*	*	1.7	*	*	2.5	*	*
LINN	*	0.5	*	*	0.2	*	*	1.3	*	*	2.0	*	*
LYON	*	0.9	*	*	0.2	*	*	1.2	*	*	2.3	*	*
MIAMI	*	0.0	*	*	0.0	*	*	0.0	*	*	0.0	*	*
MORRIS	*	0.3	*	*	0.3	*	*	1.7	*	*	2.3	*	*
OSAGE	52	0.8	*	0.3	0.2	*	0.1	1.2	*	0.8	2.2	*	1.1
SHAWNEE	*	0.6	0.9	*	0.2	0.1	*	1.8	1.1	*	2.5	2.1	*
WABAUNSEE	*	0.6	*	*	0.2	*	*	2.4	*	*	3.1	*	*
EAST CENTRAL	**53**	**0.6**	**0.9**	**1.3**	**0.1**	**0.1**	**0.2**	**1.6**	**1.1**	**1.1**	**2.3**	**2.1**	**2.5**
ALLEN	84	0.0	*	0.4	0.0	*	0.0	0.0	*	0.7	0.0	*	1.1
BOURBON	*	0.6	*	*	0.1	*	*	0.8	*	*	1.5	*	*
BUTLER	*	0.2	0.7	*	0.2	0.2	*	1.6	1.1	*	2.0	1.9	*
CHAUTAUQUA	*	0.0	*	*	0.0	*	*	0.0	*	*	0.0	*	*
CHEROKEE	182	1.2	*	2.6	0.1	*	0.1	1.0	*	0.9	2.3	*	3.6
COWLEY	126	0.3	1.8	0.2	0.2	0.2	0.1	1.6	1.1	0.9	2.1	3.1	1.2
CRAWFORD	163	1.4	*	2.6	0.1	*	0.1	1.1	*	0.7	2.6	*	3.3
ELK	*	0.6	*	*	0.2	*	*	1.1	*	*	1.9	*	*
GREENWOOD	*	0.6	*	*	0.2	*	*	1.0	*	*	1.8	*	*
LABETTE	122	0.6	*	1.1	0.1	*	0.0	1.3	*	0.9	2.0	*	2.0
MONTGOMERY	182	1.0	*	0.9	0.1	*	0.1	1.4	*	0.9	2.5	*	1.8
NEOSHO	337	0.8	*	0.7	0.1	*	0.0	1.3	*	0.7	2.2	*	1.5
WILSON	161	0.6	3.2	0.7	0.1	0.2	0.1	1.3	0.9	0.9	2.0	4.2	1.7
WOODSON	*	0.7	*	*	0.1	*	*	1.0	*	*	1.8	*	*
SOUTHEAST	**1,357**	**0.7**	**1.8**	**0.9**	**0.1**	**0.1**	**0.1**	**1.4**	**1.1**	**0.8**	**2.2**	**3.0**	**1.8**
STATE	16,302	0.3	0.4	0.2	0.1	0.1	0.1	1.8	1.1	1.8	2.3	1.6	2.1

1/ Samples tested represent data from inspection certificates of railroad cars (truckloads are converted to carlot equivalents). Summarized data includes old crop and new crop wheat moving from first point of sale and inspected by the Kansas Grain Inspection Service, Inc. 2/ Percentages by defect may not add to total due to rounding. * Not published due to insufficient data or no sample taken included in district and State totals.

KANSAS WHEAT VARIETIES - 2000 CROP

Jagger was the leading variety of wheat seeded in Kansas for the 2000 crop, according to Kansas Agricultural Statistics Service. Jagger gained popularity in all districts except the north central and southeast, accounting for 34 percent of the State's wheat. Jagger made the biggest gains in the west central and southwest districts. The KSU maintained variety 2137 ranked second over all with 23.1 percent of the acreage. It ranked first or second in all districts except for the southwest where it was third. TAM 107 remained in third position but dropped to 6.3 percent of the acreage State-wide. Ike moved up to fourth place with 4.1 percent of the acreage but dropped 1.4 percent from last year. The fifth most popular variety was Karl and improved Karl with 3.5 percent of the State's acreage. The KSU maintained variety 2163 ranked in the top five varieties in all but the western districts of the State and accounted for 2.3 percent. Seventh was AGSECO 7853 with 1.5 percent. New to the top ten are Dominator with 1.4 percent and TAM 110 with 1.3 percent. Larned remained in the top ten with 1.2 percent. Blends were used more extensively in the central one-third of the State, accounting for 7.5 percent of the acres planted State-wide. Out of the total State acres planted with blends, 87 percent had Jagger in the blend and 76 percent had 2137 in the blend. All Hard White varieties accounted for 0.2 percent of the State's acreage.

DISTRIBUTION OF KANSAS WINTER WHEAT VARIETIES, 1991-2000

VARIETY	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
	PERCENT OF SEEDED ACREAGE									
Jagger	--	--	--	--	--	1.0	6.4	20.2	29.2	34.0
2137	--	--	--	--	--	--	1.0	13.5	22.0	23.1
TAM 107	15.4	18.3	19.8	19.0	20.6	17.1	17.0	12.6	8.3	6.3
Ike	--	--	--	--	0.9	7.2	10.5	7.0	5.5	4.1
Karl/Karl 92	5.9	11.5	23.0	23.6	22.4	20.9	22.1	10.8	5.9	3.5
2163	2.6	4.6	9.0	13.8	17.1	19.8	15.4	10.4	3.4	2.3
AGSECO 7853	–	0.2	1.4	2.1	3.7	4.6	4.0	3.4	1.9	1.5
Dominator	--	--	--	--	--	--	--	0.2	0.8	1.4
TAM 110	--	--	--	--	--	--	--	--	0.5	1.3
Larned	11.6	8.9	8.3	8.3	7.6	4.8	3.6	2.4	1.9	1.2
2174	--	--	--	--	--	--	--	--	--	1.1
AgriPro Coronado	--	--	--	--	--	--	--	0.8	1.3	1.0
Akron-HRW	--	–	–	–	–	–	–	0.4	0.8	1.0
Vista	--	--	--	--	0.3	0.8	1.2	1.1	0.9	0.9
AgriPro Tomahawk	--	--	1.5	6.2	7.0	4.7	3.1	1.8	1.2	0.8
AgriPro Ogalala	--	--	--	--	0.2	1.5	1.3	0.8	0.7	0.8
AgriPro Pecos	--	--	--	0.2	1.1	1.8	1.6	1.6	0.9	0.7
AgriPro Big Dawg	--	--	--	--	--	--	--	0.2	0.4	0.5
Niobrara	--	--	--	--	--	--	--	--	--	0.5
Arapahoe	0.1	0.3	0.2	0.8	0.8	1.0	1.1	0.5	0.4	0.4
TAM 105	1.1	1.0	0.6	0.6	--	--	--	--	0.3	0.4
Scout/Scout 66	1.6	1.8	1.3	1.3	1.0	1.2	0.8	0.7	0.5	0.3
Alliance-HRW	--	--	--	--	--	--	--	--	0.1	0.3
AgriPro Longhorn	--	--	--	0.6	0.7	0.5	0.3	0.2	0.1	0.2
Champ	--	--	--	--	--	--	0.4	0.5	0.3	0.2
Eagle	1.1	1.6	1.0	1.1	1.1	0.6	0.5	0.4	0.3	0.2
AgriPro Hondo	--	--	--	--	--	--	--	--	--	0.2
T81	--	--	--	--	--	--	--	--	--	0.2
Blends	--	--	--	--	--	--	--	2.6	6.1	7.5
Hard White Varieties	--	--	--	--	--	--	--	--	--	0.2
Other Hard Varieties	59.9	51.6	33.6	22.0	15.4	12.3	9.4	7.9	6.3	3.9
Other Soft Varieties	0.7	0.2	0.3	0.4	0.1	0.2	0.3	--	--	--
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

WHEAT QUALITY PROFILE - MILLING RESULTS

SURVEY AND PROJECT PROCEDURES

The wheat quality profile is a joint project of the Kansas State University Department of Grain Science and Industry and Kansas Agricultural Statistics Service. This report provides additional information for the evaluation of the milling and baking characteristics of Kansas wheat and makes available some meaningful comparisons with previous years. Historic data are shown at the end of this bulletin for selected characteristics for the period 1991-2000.

Users of these data should recognize there are some limitations in making inferences from the results. Sample size is a limiting factor for some varieties and quality characteristics. However, one of the major indications the survey provides is quality factors by variety. This information should be useful in evaluating the milling and flour qualities of the different varieties as produced in farm fields as well as comparing variety data with that summarized in previous Wheat Quality publications.

SAMPLE COLLECTION

Wheat from which the quality profile data were developed was collected as a part of the regular Wheat Objective Yield Survey program of Kansas Agricultural Statistics Service. Survey samples were distributed proportionally to the acreage grown in each area of the State with a total of 310 sample units selected. Two small plots were laid out in each field for observation during the growing season. Plant and head counts were made within the plots about May 1, June 1, and July 1. Enumerators were instructed to return to each sample field immediately prior to harvest (normally within seven days) to clip the wheat heads within the sample plots. These heads were sent to the Kansas Agricultural Statistics Service lab in Topeka for threshing and the yield per acre was computed. Wheat for the quality profile testing was also collected from these sample fields. If a sample was abandoned or lost, an alternate sample was collected from the immediate area. Based on average head weight and quantities needed for laboratory analysis, about 1,000 grams of grain were collected from each sample field.

QUALITY TESTS

The threshed grain was sent to the Department of Grain Science and Industry at Kansas State University for quality analysis.

Moisture and protein contents, test weight, 1,000 kernel weight, kernel size distribution, degree of softening, and falling number were determined on the individual samples.

The individual samples were then composited by districts in order to provide sufficient grain and flour for reliable milling and dough testing. When there were several samples of the same variety from a district, equal weights of that variety were composited. A mixed variety composite was made for each district using equal weights of any remaining varieties. The resulting flours were used for chemical and rheological tests.

DESCRIPTION OF TESTING PROCEDURES

MARKETING TESTS

Wheat grades are based on tests conducted by inspectors who are licensed and supervised by the Federal Grain Inspection Service (FGIS). These tests determine the physical and biological condition of the grain. They include test weight, moisture and protein contents, presence of diseased and damaged kernels, unmillable material, and sanitary condition.

Flour millers perform additional tests to determine specific qualities desired for milling and baking. A major portion of Kansas hard red winter wheat is milled into flour for large wholesale bread bakeries.

The following test descriptions are intended as an aid in interpreting the tables on the following pages. For additional information on hard red winter wheat quality analysis see "Evaluating Bread Wheat" published by the Wheat Quality Council, P.O. Box 966, Pierre, SD 57501-0966.

PROTEIN

The protein test is used to predict the quantity of gluten and not the quality. The protein content of wheat or flour is predicted by determining the percent of nitrogen using the combustion nitrogen analysis (CNA) method, then multiplying by an appropriate conversion factor. Combustion nitrogen analysis involves combusting a sample in pure oxygen, collecting the combustion gases, then analyzing the gases for nitrogen content by measuring the thermal conductivity of the gases.

Wheat protein content is reported on a 12% moisture basis while flour protein content is reported on a 14% moisture basis.

Protein content of commercially milled flour averages about 1% less than the wheat from which it was milled. Flour for pan bread is usually milled from wheats having at least 12% to 13% protein. Hearth breads and hard rolls usually require higher protein content flour.

SINGLE KERNEL CHARACTERIZATION SYSTEM (SKCS)

The SKCS unit directly measures physical characteristics of wheat such as kernel hardness, kernel diameter, and kernel weight. Measurements are made on 300 individual kernels of wheat, and the single kernel average and standard deviation (uniformity) are calculated. Additionally, a classification such as "Hard", "Mixed", or "Soft" is assigned. Single kernel weight value is highly correlated with the One Thousand Kernel Weight value.

TEST WEIGHT PER BUSHEL

This test determines the weight per Winchester bushel of a sample under controlled conditions. Determinations were made using a one quart kettle for 1000 grams, or for small samples, a 1/8 quart kettle and 125 grams of wheat. This method is described in Circular No. 921 issued by the United States Department of Agriculture.

There is a correlation between the test weight and the yield of straight grade flour from a sample. Straight grade flour is a blend of all the flour streams from each grinding operation in the mill. As the test weight increases, the expected yield of flour also increases.

The test weight of wheat decreases as moisture is added. This decrease is the result of:

1) the lower specific gravity of water as compared to wheat
2) the swelling of the kernels as water is absorbed

If the wetted wheat is redried, it doesn't regain the original test weight because the kernel is unable to shrink after swelling and the roughened bran coat prevents close packing of the kernels. Shriveled kernels also show a decreased test weight because of their inability to pack tightly.

A low test weight is a strong indicator of unsound wheat. This test, used along with the 1000 kernel weight and the wheat size tests, provides an estimate of milling extraction (flour yield).

HECTOLITER WEIGHT

To convert test weight in pounds per Winchester bushel (lb/bu) to kilograms per hectoliter (kg/hl), the following formula is used:

$$kg/hl = (1.292 \times lb/bu) + 1.419$$

This is a change for 2000. The formula used in previous years was: kg/hl = lb/bu X 1.287.

1000 KERNEL WEIGHT (TKW)

An electronic seed counter is used to count 40 grams of cleaned whole kernels of wheat. Kernel weight is reported in grams per 1000 kernels on a 12% moisture basis.

The percentage of endosperm in wheat kernels of the same variety is normally greater in larger wheat kernels than in smaller kernels. Plump kernels of wheat weigh more; and therefore, have a higher 1000 kernel weight which suggests good milling extraction. However, this conclusion must be substantiated by the test weight and wheat size tests.

WHEAT KERNEL (SIZE) DISTRIBUTION

Kernel size distribution is determined by sifting 200 grams of wheat over wire mesh screens of two different sizes (7w and 9w) for one minute.

Higher percentages over the 7w represent larger, plumper kernels containing a large percentage of endosperm indicating a higher potential flour yield. Factors such as wetting or scouring will affect the outcome of this test. Wetting will increase the size of the wheat kernels. Although the kernels are larger, the milling extraction will remain the same. On the other hand, scouring will decrease the size of the wheat kernels by removing the dust and smoothing the bran of the kernels. Although the theoretical yield is lower, the milling extraction is unchanged. To eliminate false conclusions, the wheat size test should be used in conjunction with the test weight and 1000 kernel weight tests.

MOISTURE

The measurement of moisture in wheat and flour is important because:

1) wheat cannot be safely stored above 12-13 percent moisture
2) moisture has a bearing on flour yield in milling
3) all analysis must be on a common moisture basis to be compared

Wheat moisture is measured using a Motomco Moisture Meter. The Motomco Moisture Meter works on the principle of capacitance. The capacitance is greater in water than in the rest of the kernel; as a result, the increase in capacitance can be related to the water content. Moisture calibration of the Motomco is checked with the Air Oven Method (AACC Method 44-15A). Moisture content is calculated from the loss in weight which occurs during oven drying at 130° C for one hour.

LABORATORY MILLING

The composited wheat samples were conditioned by adding enough water to bring the moisture content to 15.0% approximately 24 hours prior to milling. Each composited sample was milled on a Brabender Quadrumat Senior laboratory flour mill. Four products were obtained from each milling: break flour, reduction flour, bran, and shorts. Total flour extraction (yield) was expressed as percentage of the total products recovered from the mill.

The percent of ash, or mineral content (AACC Method 08-01), is given with the flour extraction as an additional measure of milling performance. The bran coat normally contains about ten times the amount of ash as the endosperm. As the level of extraction increases, the ash content typically increases indicating that more bran material was ground into flour. Different wheats also have varying amounts of ash content in the endosperm, depending on the variety and the growing conditions. A wheat with good milling characteristics gives a high yield of low ash flour.

WET GLUTEN

Ten grams of ground wheat meal and 5.2 milliliters of 2 percent salt solution are mixed in the Glutomatic test chamber for 20 seconds. The gluten is then washed for 5 minutes and a separation of gluten and soluble starch is obtained. The gluten ball is then divided and placed in a centrifuge for 1 minute to remove excess water. The weight of the centrifuged gluten x 10 = Percent Wet Gluten.

DRY GLUTEN

The gluten from the wet gluten process above is placed between two heated Teflon-coated plates for approximately 4 minutes. The weight of the dry gluten x 10 = Percent Dry Gluten.

FALLING NUMBER (AACC Method 56-81B)

The falling number test is used to detect sprout damage in wheat. Wet weather during harvest causes sprouting and the release of starch-liquefying enzymes. These enzymes are very active at high temperatures and may cause the baked product to be gummy inside or the flour in gravies and soups to break down.

The falling number test is relatively simple. The falling number value is the number of seconds from the time of immersion of the test tube in boiling water until the stirrer-viscometer has fallen a prescribed distance through a flour paste. As the amount of sprouted wheat increases, the falling number decreases.

There is an optimum falling number value for each flour use.

FARINOGRAPH AND MIXOGRAPH

The mixograph and farinograph measure and record the resistance to mixing of a flour and water dough. The recording, or curve, rises to a "peak" as the flour proteins are developed into a three dimensional structure (gluten) and then falls as the gluten is broken down by continued mixing.

Time required for a mixograph or farinograph curve to reach the "peak" is an estimate of the amount of mixing required to properly develop the dough for bread baking. The rate at which the curve falls and narrows after the peak, and stability of curve height on either side of the peak are indicators of tolerance to over-mixing. Curves made by the two instruments are not directly comparable.

The water absorption values obtained with the farinograph and mixograph provide estimates of water required for baking. Absorption usually increases as protein content increases.

Large mechanized bakeries require flour with high water absorption, medium-long mixing requirement, and adequate mixing tolerance.

Flours with low mixing requirement usually lack mixing tolerance. Flours with excessive mixing requirement have good tolerance but increase bakery energy costs, disrupt production schedules, and may cause machining problems which results in inferior loaves which cannot be sold.

The following information is derived from the mixograph test (AACC Method 54-40A):

Absorption: The percentage of water required to produce an optimum mixogram. Too much water produces a curve that dips during the development stage; too little water causes the curve to be very wide.

Peak (Mixing) Time: The time required for the dough to reach full development. This time can be determined from the intersection of lines drawn through the center of both sides of the curve. The time (minutes) from the start of the curve to the intersection of the two lines is the optimum mixing time.

Mixing Tolerance: There is no standard measure of mixograph mixing tolerance. A dough with poor mixing tolerance will produce a curve with a very sharp peak followed by an immediate decrease in width and height of the curve. A dough with good mixing tolerance will produce a curve with a gradual peak that maintains its width and height after the peak.

Information derived from the farinograph test (AACC Method 54-21,A) include:

Absorption: This is the percentage of water required to center the curve on the 500 Brabender Unit (B.U.) line at the maximum consistency of the dough (Peak). Absorption is reported on a 14% moisture basis.

Peak (Mixing) Time: This is the time required for the curve to reach its full development or maximum consistency. Long peak times are usually associated with strong wheats.

Stability (Tolerance): This is the time that the curve remains above the 500 B.U. line and is measured from the arrival time to the departure time. The longer the stability, the greater the abuse and the longer the fermentation a flour is able to withstand.

Degree of Softening: This is another indicator of mixing tolerance of the dough. Given in Brabender units, it measures the breakdown of the dough 12 minutes after the peak mixing time. Lower values are better as they indicate greater tolerance.

WHEAT QUALITY PROFILE - 2000 CROP

INDIVIDUAL SAMPLES

Area & Variety	No. of Samples	Protein 12% M.B.	Test Weight		1,000 K.W. 12% M.B.	Wheat Size Test 1/			SKCS Hardness	Falling Number 2/
						Over 7W	Over 9W	Thru 9W		
		Pct.	Lb/Bu	Kg/Hl	Grams	- - - Percent - - -				Seconds
NORTHWEST										
2137	11	13.3	58.9	77.5	24.2	19.8	76.2	4.0	71.8	377
JAGGER	5	15.7	57.3	75.5	21.8	14.7	80.4	5.0	73.3	356
TAM 107	7	14.3	59.4	78.2	26.5	29.0	67.6	3.4	75.9	400
VISTA	5	13.9	56.6	74.6	22.5	17.3	77.2	5.5	68.3	368
OTHER	16	13.0	59.9	78.9	24.5	25.9	70.5	3.6	72.9	380
ALL VARIETIES	44	13.7	58.9	77.6	24.2	22.6	73.3	4.1	72.6	378
MINIMUM	-	9.9	54.0	71.2	20.1	2.9	31.1	0.5	57.4	316
MAXIMUM	-	17.1	65.7	86.3	32.4	68.2	87.6	12.1	85.2	456
WEST CENTRAL										
2137	9	11.7	59.3	78.1	27.2	43.2	50.2	6.6	72.1	358
IKE	4	12.1	61.1	80.3	29.4	52.8	44.9	2.3	70.7	365
JAGGER	11	13.2	58.4	76.9	25.6	40.1	57.2	2.6	80.7	379
TAM 107	3	11.1	59.3	78.0	28.4	57.1	39.7	3.2	84.4	395
OTHER	8	12.6	59.0	77.6	26.0	38.2	59.0	2.7	78.0	383
ALL VARIETIES	35	12.4	59.2	77.9	26.8	43.4	52.9	3.7	77.0	374
MINIMUM	-	10.1	53.7	70.8	21.8	4.6	30.7	0.5	42.0	166
MAXIMUM	-	16.2	63.0	82.8	31.5	68.3	85.5	43.1	86.5	412
SOUTHWEST										
2137	7	12.9	58.5	76.9	26.3	33.0	63.0	4.1	77.1	382
IKE	8	12.6	60.5	79.5	27.4	33.4	63.6	3.0	74.2	352
JAGGER	15	13.4	59.2	78.0	27.2	38.9	58.3	2.8	79.2	382
TAM 107	9	12.4	59.1	77.7	27.6	37.5	59.0	3.5	81.1	395
OTHER	15	13.0	59.8	78.7	26.9	36.2	59.7	4.2	78.9	383
ALL VARIETIES	54	12.9	59.5	78.2	27.1	36.3	60.2	3.5	78.5	380
MINIMUM	-	10.0	52.0	68.6	19.5	1.3	32.0	0.0	60.0	196
MAXIMUM	-	18.1	64.4	84.6	32.4	67.6	86.2	18.2	94.3	425
NORTH CENTRAL										
2137	12	11.6	58.8	77.3	28.3	55.3	43.6	1.1	68.0	397
JAGGER	6	12.9	59.9	78.8	27.4	49.3	48.6	2.1	74.6	396
KARL 92	9	12.7	59.2	77.9	28.7	50.3	48.1	1.5	66.3	399
OTHER	11	12.4	61.4	80.7	28.7	44.8	53.4	1.7	67.6	395
ALL VARIETIES	38	12.3	59.8	78.7	28.3	50.1	48.3	1.5	68.5	397
MINIMUM	-	10.4	51.8	68.4	22.1	13.0	24.0	0.1	47.2	356
MAXIMUM	-	16.4	65.5	86.0	33.9	75.8	85.6	3.9	86.8	411
CENTRAL										
2137	11	10.9	59.7	78.6	30.2	58.2	40.0	1.9	68.0	421
JAGGER	15	10.8	60.9	80.1	29.8	56.8	41.5	1.8	77.9	408
2137/JAGGER	8	10.9	60.0	78.9	28.8	54.5	43.3	2.3	75.2	411
OTHER	12	11.1	60.9	80.1	29.9	56.6	41.8	1.6	76.9	418
ALL VARIETIES	46	10.9	60.4	79.5	29.7	56.6	41.5	1.8	74.7	414
MINIMUM	-	9.4	56.6	74.5	24.7	28.6	21.8	0.5	47.2	377
MAXIMUM	-	14.6	65.2	85.7	33.4	77.6	66.7	4.7	89.0	465

WHEAT QUALITY PROFILE - 2000 CROP

INDIVIDUAL SAMPLES

Area & Variety	No. of Samples	Protein 12% M.B.	Test Weight		1,000 K.W. 12% M.B.	Wheat Size Test 1/			SKCS Hardness	Falling Number 2/
						Over 7W	Over 9W	Thru 9W		
		Pct.	Lb/Bu	Kg/Hl	Grams	- - - Percent - - -				Seconds
SOUTH CENTRAL										
2137	12	11.0	60.0	78.9	29.8	57.2	41.6	1.3	71.8	412
JAGGER	34	11.2	60.1	79.1	28.7	47.6	50.1	2.3	75.8	418
2137/JAGGER	9	10.6	60.8	80.0	30.5	62.6	36.4	1.0	72.2	406
OTHER	13	11.6	59.3	78.1	28.6	49.5	48.4	2.1	61.8	398
ALL VARIETIES	68	11.2	60.1	79.0	29.1	51.6	46.4	1.9	72.1	412
MINIMUM	-	8.8	54.5	71.8	22.5	11.9	22.3	0.3	43.8	327
MAXIMUM	-	17.0	63.8	83.8	35.0	77.3	81.4	9.2	89.6	481
NORTHEAST										
OTHER	6	11.3	60.4	79.5	31.0	70.9	28.2	0.9	57.6	412
ALL VARIETIES	6	11.3	60.4	79.5	31.0	70.9	28.2	0.9	57.6	412
MINIMUM	-	9.5	58.9	77.5	25.5	36.4	14.8	0.1	48.5	381
MAXIMUM	-	15.9	61.5	80.9	34.5	85.1	59.9	3.8	84.1	442
EAST CENTRAL										
KARL 92	4	10.9	58.5	77.0	32.3	69.8	29.3	0.9	55.1	427
OTHER	5	11.3	59.1	77.8	31.3	68.1	30.8	1.1	63.5	444
ALL VARIETIES	9	11.1	58.9	77.5	31.7	68.8	30.2	1.0	59.8	436
MINIMUM	-	9.1	56.9	75.0	27.1	46.5	13.6	0.3	47.9	380
MAXIMUM	-	13.1	60.5	79.6	36.0	85.7	52.1	2.0	78.5	477
SOUTHEAST										
2137	5	10.6	60.7	79.9	32.0	74.3	25.1	0.6	67.0	434
JAGGER	5	10.0	60.9	80.0	32.6	74.1	25.4	0.6	67.4	405
OTHER	2	10.8	57.0	75.1	33.0	80.8	18.5	0.6	47.0	390
ALL VARIETIES	12	10.4	60.4	79.5	32.4	74.8	24.6	0.6	63.8	414
MINIMUM	-	9.2	57.0	75.1	29.6	60.5	13.1	0.0	47.0	361
MAXIMUM	-	11.6	62.7	82.4	35.8	86.7	38.4	1.2	81.5	459
STATE										
2137	71	11.6	59.4	78.2	28.4	49.4	48.0	2.6	70.0	397
2163	6	11.6	60.1	79.0	30.1	61.0	37.2	1.8	65.6	404
AGSECO 7853	3	13.4	62.2	81.8	29.7	53.4	44.7	1.9	71.8	402
AKRON	4	12.7	58.2	76.6	22.1	17.0	78.2	4.8	74.2	387
HONDO	3	13.2	61.2	80.5	28.2	37.5	61.3	1.2	78.0	418
IKE	15	12.9	60.2	79.2	27.5	35.7	61.3	3.0	72.6	352
JAGGER	93	12.1	59.8	78.6	28.0	46.4	51.2	2.4	76.7	401
KARL 92	17	11.8	59.3	78.0	30.5	57.5	41.3	1.2	61.0	407
TAM 107	19	12.9	59.2	77.9	27.4	37.5	59.1	3.4	79.9	397
VISTA	7	13.9	56.7	74.7	23.4	21.7	73.5	4.8	69.5	372
OGALLAH	3	11.5	60.2	79.2	25.5	30.6	66.1	3.3	68.7	401
2137/JAGGER	18	10.8	60.3	79.3	29.7	59.1	39.3	1.6	73.1	410
OTHER	53	12.1	60.1	79.1	27.6	44.2	53.1	2.7	72.1	393
ALL VARIETIES	312	12.0	59.7	78.6	28.0	46.1	51.3	2.6	72.8	397
MINIMUM	-	8.8	51.8	68.4	19.5	1.3	13.1	0.0	42.0	166
MAXIMUM	-	18.1	65.7	86.3	36.0	86.7	87.6	43.1	94.3	481

1/ May not add to 100 percent due to rounding. 2/ 14% moisture base.

WHEAT QUALITY PROFILE - 2000 CROP

COMPOSITED SAMPLES

Area and Variety	Prot. 12% M.B.	Test Weight		1,000 K.W. 12% M.B.	Wheat Size Test 1/			Wheat Data		Milling Data		Flour Data
					Over 7W	Over 9W	Thru 9W	Gluten		Extr-action	Ash 14% M.B.	Flour Protein 2/
								Wet	Dry			
	Pct.	Lb/Bu	Kg/Hl	Grams	- - - - - - - - - - - - - - - - - Percent - - - - - - - - - - - - - - - - -							
NORTHWEST												
2137	13.7	57.6	75.8	23.1	23.6	72.6	3.9	13.7	31.8	64.3	0.66	12.1
JAGGER	16.0	56.3	74.1	21.1	15.9	79.2	4.9	18.7	42.0	64.6	0.60	13.9
TAM 107	14.4	59.3	78.0	24.2	35.9	56.2	7.9	15.6	35.0	67.6	0.58	12.5
VISTA	14.4	55.5	73.1	21.6	19.3	75.2	5.6	14.9	34.0	64.3	0.60	12.4
BLEND 3/	13.6	58.8	77.4	23.5	27.7	68.5	3.8	12.8	31.1	65.7	0.57	11.9
ALL VARIETIES	14.4	57.5	75.7	22.7	24.5	70.3	5.2	15.1	34.8	65.3	0.60	12.5
WEST CENTRAL												
2137	12.1	59.3	78.0	24.8	35.3	61.8	2.9	11.0	28.2	67.1	0.54	10.7
IKE	12.2	61.4	80.7	26.7	43.1	54.5	2.4	12.3	27.3	69.1	0.46	10.8
JAGGER	13.5	58.8	77.4	23.6	30.7	66.9	2.4	12.1	31.5	67.7	0.58	12.0
TAM 107	11.4	60.0	78.9	25.2	45.7	51.7	2.7	8.8	24.2	66.5	0.51	9.9
BLEND 3/	12.5	59.4	78.1	24.7	32.0	65.7	2.4	11.4	27.9	66.7	0.55	10.9
ALL VARIETIES	12.4	59.8	78.6	25.0	37.3	60.1	2.6	11.1	27.8	67.4	0.53	10.9
SOUTHWEST												
2137	13.3	57.0	75.0	23.9	29.8	65.5	4.8	12.1	28.8	63.4	0.56	11.3
IKE	12.7	59.8	78.7	25.5	32.6	64.0	3.5	12.7	29.6	65.6	0.52	11.1
JAGGER	13.9	58.9	77.5	25.7	37.2	60.0	2.9	15.0	35.7	66.8	0.57	11.9
TAM 107	12.8	58.3	76.7	24.8	36.1	59.8	4.1	11.7	28.9	65.5	0.52	10.9
BLEND 3/	13.3	59.0	77.6	24.1	34.0	62.3	3.8	14.9	25.1	65.8	0.54	11.5
ALL VARIETIES	13.2	58.6	77.1	24.8	33.9	62.3	3.8	13.3	29.6	65.4	0.54	11.3
NORTH CENTRAL												
2137	11.8	59.2	77.8	26.1	46.5	52.3	1.3	10.4	26.0	66.6	0.56	10.1
JAGGER	13.3	60.0	78.9	25.8	41.8	55.6	2.6	11.6	29.8	68.1	0.53	11.7
KARL 92	13.2	59.1	77.8	26.0	42.1	56.0	2.0	10.6	28.3	68.2	0.61	11.5
BLEND 3/	13.0	60.2	79.2	26.0	47.6	50.8	1.6	11.4	28.0	68.7	0.54	11.1
ALL VARIETIES	12.9	59.6	78.4	26.0	44.5	53.7	1.9	11.0	28.0	67.9	0.56	11.1
CENTRAL												
2137	11.3	60.4	79.5	28.2	58.3	40.2	1.6	8.7	23.2	66.5	0.49	9.6
JAGGER	11.3	60.8	80.0	27.8	57.6	40.5	1.9	10.1	25.2	66.8	0.52	9.6
2137/JAGGER	11.5	60.6	79.8	28.0	54.8	43.0	2.2	9.7	25.5	66.8	0.50	9.7
BLEND 3/	11.7	61.2	80.5	28.3	58.6	39.9	1.6	9.3	24.8	66.9	0.52	9.9
ALL VARIETIES	11.5	60.8	79.9	28.1	57.3	40.9	1.8	9.5	24.7	66.7	0.51	9.7

WHEAT QUALITY PROFILE - 2000 CROP

COMPOSITED SAMPLES

Area and Variety	Prot. 12% M.B.	Test Weight		1,000 K.W. 12% M.B.	Wheat Size Test 1/			Wheat Data		Milling Data		Flour Data
					Over 7W	Over 9W	Thru 9W	Gluten		Extr-action	Ash 14% M.B.	Flour Protein 2/
								Wet	Dry			
	Pct.	Lb/Bu	Kg/Hl	Grams	- - - - - - - - - - - - - - - - - Percent - - - - - - - - - - - - - - - - -							
SOUTH CENTRAL												
2137	11.3	60.3	79.4	29.0	56.5	42.5	1.1	9.4	23.8	66.8	0.51	9.6
JAGGER	11.7	60.0	79.0	27.0	46.8	51.6	1.7	9.1	24.6	66.9	0.52	10.0
2137/JAGGER	11.1	60.9	80.2	29.7	61.4	37.8	0.9	9.1	24.1	68.0	0.49	9.3
BLEND 3/	11.9	59.5	78.3	26.8	51.0	47.3	1.8	10.3	26.6	67.1	0.49	10.6
ALL VARIETIES	11.5	60.2	79.2	28.2	53.9	44.8	1.4	9.5	24.8	67.2	0.50	9.9
NORTHEAST												
BLEND 3/	11.4	60.7	79.8	29.1	65.6	33.6	0.9	10.0	26.0	68.3	0.46	9.9
ALL VARIETIES	11.4	60.7	79.8	29.1	65.6	33.6	0.9	10.0	26.0	68.3	0.46	9.9
EAST CENTRAL												
KARL 92	11.2	59.0	77.7	29.8	64.5	34.7	0.9	7.3	19.5	68.9	0.48	9.4
BLEND 3/	11.6	59.6	78.4	28.0	61.6	37.3	1.1	8.5	23.1	67.6	0.54	9.8
ALL VARIETIES	11.4	59.3	78.0	28.9	63.1	36.0	1.0	7.9	21.3	68.3	0.51	9.6
SOUTHEAST												
2137	10.7	61.0	80.2	30.5	69.3	29.9	0.8	8.2	21.2	67.3	0.55	9.0
JAGGER	10.3	61.1	80.3	29.9	68.1	31.3	0.6	6.8	18.9	68.1	0.51	8.5
BLEND 3/	10.8	58.5	77.0	30.9	77.5	21.7	0.9	6.5	17.7	68.4	0.45	8.9
ALL VARIETIES	10.6	60.2	79.2	30.4	71.6	27.6	0.8	7.2	19.3	67.9	0.50	8.8
STATE												
2137	12.0	59.2	78.0	26.5	45.6	52.1	2.3	10.5	26.1	66.0	0.55	10.4
IKE	12.5	60.6	79.7	26.1	37.8	59.2	2.9	12.5	28.5	67.3	0.49	10.9
JAGGER	12.9	59.4	78.2	25.9	42.6	55.0	2.4	11.9	29.7	67.0	0.55	11.1
KARL 92	12.2	59.1	77.7	27.9	53.3	45.3	1.4	8.9	23.9	68.6	0.55	10.4
TAM 107	12.9	59.2	77.9	24.7	39.2	55.9	4.9	12.0	29.4	66.5	0.54	11.1
VISTA	14.4	55.5	73.1	21.6	19.3	75.2	5.6	14.9	34.0	64.3	0.60	12.4
2137/JAGGER	11.3	60.8	80.0	28.9	58.1	40.4	1.6	9.4	24.8	67.4	0.50	9.5
BLEND 3/	12.2	59.6	78.5	26.8	50.6	47.4	2.0	10.6	25.6	67.2	0.52	10.5
ALL VARIETIES	12.4	59.4	78.2	26.4	45.7	51.8	2.5	11.1	27.2	66.9	0.53	10.7

1/ May not add to 100 percent due to rounding. 2/ 14% moisture base. 3/ All other varieties with insufficient grain available for separate tests.

WHEAT QUALITY PROFILE - 2000 CROP

PHYSICAL DOUGH TEST BY COMPOSITED SAMPLES

Area and Variety	Physical Dough Test					
	Mixograph		Farinograph			
	Absorption	Peak Time	Absorption	Peak Time	Stability	Softening
	Percent	Minutes	Percent	- - - - - - - - Minutes - - - - - - - -		Degree
NORTHWEST						
2137	63.5	3.5	59.5	6.5	13	30
JAGGER	65.5	3.8	61.3	8.0	12	15
TAM 107	65.5	3.1	61.0	6.0	22	25
VISTA	63.5	4.3	57.2	8.0	16	20
BLEND 1/	63.5	4.2	57.9	7.0	14	27
ALL VARIETIES	64.3	3.8	59.4	7.1	15	23
WEST CENTRAL						
2137	61.5	4.0	58.0	6.0	10	30
IKE	61.5	3.8	58.7	6.5	9	40
JAGGER	63.5	3.6	59.7	6.8	14	30
TAM 107	58.5	3.7	59.7	2.5	10	35
BLEND 1/	59.5	3.2	58.1	5.0	16	30
ALL VARIETIES	60.9	3.7	58.8	5.4	12	33
SOUTHWEST						
2137	61.5	3.8	57.7	7.0	14	25
IKE	61.5	3.7	58.0	8.0	14	30
JAGGER	63.5	4.0	59.5	7.0	11	25
TAM 107	61.5	3.3	60.0	6.0	12	30
BLEND 1/	63.5	3.9	59.5	8.0	13	20
ALL VARIETIES	62.3	3.7	58.9	7.2	13	26
NORTH CENTRAL						
2137	58.5	4.0	55.8	2.0	13	30
JAGGER	63.5	4.5	57.6	8.0	22	25
KARL 92	61.5	5.1	56.7	8.0	22	10
BLEND 1/	61.5	4.6	57.0	5.5	23	20
ALL VARIETIES	61.3	4.6	56.8	5.9	20	21
CENTRAL						
2137	58.5	3.5	56.4	2.0	9	35
JAGGER	58.5	3.9	57.0	5.0	12	20
2137/JAGGER	58.5	3.9	56.9	5.0	10	40
BLEND 1/	58.5	4.1	56.6	5.0	12	25
ALL VARIETIES	58.5	3.9	56.7	4.3	11	30
SOUTH CENTRAL						
2137	59.5	4.5	56.4	2.0	9	30
JAGGER	59.5	3.5	57.0	6.0	17	20
2137/JAGGER	57.5	3.8	56.6	2.0	8	40
BLEND 1/	57.5	3.5	56.3	5.0	12	25
ALL VARIETIES	58.5	3.8	56.6	3.8	11	29
NORTHEAST						
BLEND 1/	58.5	4.4	56.2	1.5	11	25
ALL VARIETIES	58.5	4.4	56.2	1.5	11	25
EAST CENTRAL						
KARL 92	57.5	4.6	56.3	1.5	6	45
BLEND 1/	59.5	5.5	57.2	1.5	7	40
ALL VARIETIES	58.5	5.1	56.8	1.5	6	43
SOUTHEAST						
2137	58.5	4.1	57.7	1.5	8	50
JAGGER	57.5	4.1	55.5	1.5	6	45
BLEND 1/	57.5	5.0	56.6	1.5	6	55
ALL VARIETIES	57.8	4.4	56.6	1.5	7	50
STATE						
2137	60.2	3.9	57.4	3.9	11	33
IKE	61.5	3.8	58.4	7.3	12	35
JAGGER	61.6	3.9	58.2	6.0	13	26
KARL 92	59.5	4.9	56.5	4.8	14	28
TAM 107	61.8	3.4	60.2	4.8	15	30
VISTA	63.5	4.3	57.2	8.0	16	20
2137/JAGGER	58.0	3.9	56.8	3.5	9	40
BLEND 1/	59.9	4.3	57.3	4.4	12	30
ALL VARIETIES	60.6	4.0	57.7	4.9	12	30

1/ All other varieties with insufficient grain available for separate tests.

WHEAT QUALITY PROFILE, 1999-2000

RANGES FOR PROTEIN CONTENT - 12% M.B. (MOISTURE BASIS) 1/

Year	Less than 9.0	9.0-9.9	10.0-10.9	11.0-11.9	12.0-12.9	13.0 and Over	State Avg.
	- Percent of Samples -						
1999	0.3	12.6	31.4	21.7	18.4	15.5	11.5
2000	0.6	9.6	24.0	21.8	18.3	25.6	12.0

1/ May not add to 100 percent due to rounding.

RANGES FOR TEST WEIGHT - KILOGRAMS/HECTOLITER 1/

Year	Less than 70.0	70.0-71.9	72.0-73.9	74.0-75.9	76.0-77.9	78.0-79.9	80.0-81.9	82.0 & Over	State Avg.
	- Percent of Samples -								
1999	.6	.3	4.9	9.7	27.5	28.8	20.1	8.1	78.3
2000	.6	1.6	3.5	11.9	19.4	33.5	19.7	9.7	78.6

1/ May not add to 100 percent due to rounding.

RANGES FOR FALLING NUMBER - SECONDS 1/

Year	Less than 180	180-299	300-399	400-419	420 and Over	State Avg.
	- Percent of Samples -					
1999	1.6	13.6	48.2	17.8	18.8	365
2000	.3	1.0	58.0	21.5	19.2	397

1/ May not add to 100 percent due to rounding.

WHEAT QUALITY PROFILE, 1991-2000

INDIVIDUAL SAMPLES

Year	Number of Samples	Wheat Analysis							SKCS Hardness 2/
		Protein % 12% M.B.	Test Weight		1,000 Kernels	Wheat Size 1/			
					12% M.B.	Over 7W	Over 9W	Thru 9W	
			Lb./Bu.	Kg./Hl.	Grams	- - - - - Percent - - - - -			
1991	276	12.6	60.4	77.7	27.8	46.4	51.7	2.0	64.3
1992	275	12.0	60.4	77.7	29.2	55.2	43.3	1.6	65.7
1993	273	11.3	60.6	78.0	29.0	50.3	48.3	1.5	68.6
1994	274	12.3	61.3	78.9	27.4	45.1	53.0	1.9	69.3
1995	271	12.4	58.7	75.6	25.3	38.0	58.7	3.3	57.0
1996	274	13.8	60.2	77.5	28.3	50.4	48.2	1.5	62.9
1997	301	11.9	60.4	79.5 3/	30.3	60.2	38.8	1.0	44.5
1998	307	11.4	61.1	80.4	29.1	54.9	43.7	1.4	67.8
1999	307	11.4	59.5	78.3	29.9	63.1	36.2	0.9	62.2
2000	312	12.0	59.7	78.6	28.0	46.1	51.3	2.6	72.8

1/ May not add to 100 percent due to rounding. 2/ NIR hardness started in 1991. It changed to SKCS hardness in 1998. 3/ New conversion procedures for 1997 as noted on page 23.

WHEAT QUALITY PROFILE, 1991-2000

COMPOSITED SAMPLES

Year	Number of Samples	Wet Gluten 14% M.B. 1/	Dry Gluten 14% M.B. 1/	Falling Number 2/	Physical Dough Test				
					Farinograph				
					Absorption	Peak Time	Stability	Valorimeter	Softening
		- - - - - Percent - - - - -		Seconds	Percent	- - - - - - - - - Minutes - - - - - - - - -			Degree
1991	276	29.8	11.3	NA	55.9	5.7	15	66	NA
1992	275	29.1	10.8	NA	58.8	5.8	13	66	NA
1993	273	25.1	9.8	NA	54.9	5.6	16	63	NA
1994	274	28.7	10.8	NA	56.1	6.3	17	68	NA
1995	271	30.4	11.1	NA	56.6	5.7	13	64	NA
1996	274	32.4	12.6	NA	57.8	6.1	11	67	NA
1997	301	24.5	9.5	NA	55.2	4.2	13	62	NA
1998	307	25.3	10.6	NA	57.7	4.0	12	59	NA
1999	307	28.5	10.3	363	54.9	3.4	16	NA	45
2000	312	27.2	11.1	412	57.7	4.9	12	NA	30

1/. Gluten is for flour in 1988-1996. Beginning in 1997, Gluten is for wheat. 2/ 14% moisture base.

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FREE ( ) 996 HAY DIRECTORY--Includes information for hay users and growers; August.

Check the reports you would like to receive and enter total amount due. $ _____ Total Amount.

If you checked yes to any of the questions, you qualify for free reports. Check the reports you would like to receive and send a copy of this order form to:

AGRICULTURAL STATISTICIAN
PO BOX 3534
TOPEKA, KS 66601-3534

IF YOU CHECKED NO TO THE ABOVE THREE QUESTIONS, YOU MUST PAY FOR USDA/KASS REPORTS. SEND CHECK OR MONEY ORDER PAYABLE TO USDA/NASS AND THIS FORM TO:

AGRICULTURAL STATISTICIAN
PO BOX 3534
TOPEKA, KANSAS 66601-3534

Firm or Farm Name:_____

Your Name:_____

Address:_____

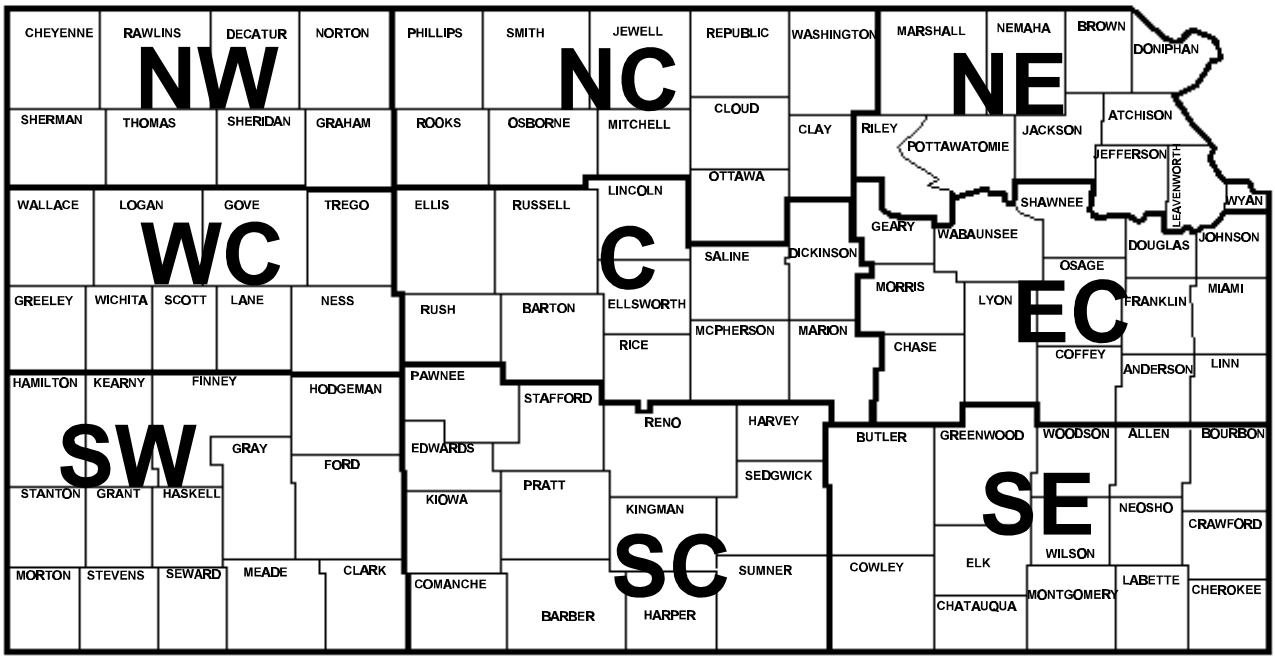
City:_____ State:_____

Telephone:_____ Zip:_____

Virtually all reports released by Kansas Agricultural Statistics Service are now also available on the Internet. The home page address for Kansas Agricultural Statistics Service on the Internet is:

http://www.nass.usda.gov/ks/

AGRICULTURAL STATISTICS DISTRICTS



Kansas is divided into nine Agricultural Statistics districts for convenience in compiling and presenting statistical information on crops and livestock. These nine districts are outlined on the above map. The districts are designated as follows: northwest (NW) (10), west central (WC) (20), southwest (SW) (30), north central (NC) (40), central (C) (50), south central (SC) (60), northeast (NE) (70), east central (EC) (80), and southeast (SE) (90). In tables showing statistical information by counties in this bulletin, counties within each district are grouped together in alphabetical order. Totals and averages are shown for each district.